Applied *Eco*Systems, Inc.
Environmental Management, Consulting & Field Services

DATA REPORT
AND PROPOSED ADDITIONAL MONITORING

TO: Brandon Pursel, USEPA
Dave Favero, RACER TRUST

CC: Shaun Shields, EGLE RRD

FROM: Rodney Abke & Mike Smith, Applied EcoSystems, Inc.

DATE: May 13, 2022

SUBJECT: RACER Flint West Industrial Land (#12990)
Semi-Annual Monitoring

CONTENTS:

APPENDIX D .....Lab Data Validation Report

1.0 INTRODUCTION

Since the previous Data Report (dated November 22, 2021), Applied EcoSystems, Inc. (Æ) conducted a routine groundwater monitoring event (gauging and sampling) on the Site and the adjoining Genesee County Parks (GCP) property to the north on March 16, 2022. This report provides a summary and the results of the groundwater monitoring event.

A Site Location Map is included as Figure 1. The Site consists of approximately five acres of land located west of Stevens Street and north of Glenwood Avenue in Flint, Genesee County, Michigan. Almost the entire Site consists of concrete pavement, remaining after the demolition of a former manufacturing building. The Site is secured with a locked chain-link fence.

The Site is developed with a Consumers Energy electrical substation with an equipment shelter in the central portion and a utility conduit shed on the southeast corner. Per John Ebenhoeh with Consumers Energy (2016), the small building on the southeast corner is a shelter for conduits that run under the road to the GM tool and die facility. This building is accessed approximately once per year for approximately two hours. The building in the fenced area is a support equipment shelter for the substation. The fenced area is accessed approximately once per month for approximately two hours, and the building itself is accessed less frequently and for shorter durations.

2.0 MONITORING ACTIVITIES COMPLETED

Groundwater Monitoring[1]

- All monitoring wells were gauged for depth to water on March 16, 2022. A Groundwater Contour Map, prepared using the March 16, 2022 groundwater elevation data, is included as Figure 3 in Appendix A. Cross section diagrams, showing soil types, and groundwater elevations are included in Appendix B as Attachment 1.
- A routine groundwater monitoring event was conducted from March 16, 2022.
- Groundwater samples were collected from monitoring wells MW-103S, MW-104S, MW-106SR, MW-108S, MW-110S, MW-112S, MW-114S and MW-117S[1] to be analyzed for Volatile Organic Compounds (VOCs), and dissolved and total metals (arsenic, chromium [total], chromium VI, copper, lead, selenium and zinc).
- Groundwater samples were collected from the above monitoring wells, except for MW-104S, and MW-108S, to be analyzed for 28 PFAS.

[1] A reduction in the number of wells sampled during the semi-annual sampling events was requested in the *November 2021 Subsurface Investigation* report dated January 27, 2022, submitted to USEPA. The request was approved by USEPA on March 4, 2022.

Analytical results are summarized in Appendix B as Attachment 2. Laboratory analytical reports for all monitoring activities are included in Appendix B as Attachment 3.

3.0 MONITORING RESULTS

Groundwater (Semiannual Sampling)

Comparison of groundwater data (March 2022) to current EGLE Generic Residential and Non-Residential Cleanup Criteria (GR/NCC) dated December 21, 2020 indicates the following:

Metals: Dissolved Arsenic was detected above drinking water and/or groundwater to surface water (GSI) criteria as shown in the table below. The concentrations are consistent with expected regional conditions, do not appear to represent a plume, and are believed generally to be naturally occurring. Although EGLE has published state-wide and regional "background" concentrations for soils, there are no such values published for groundwater. The concentrations are generally consistent with concentrations encountered by *Æ* at other uncontaminated sites in the Flint area. The dissolved metals concentrations are considered to be more representative of Site conditions for the purposes of this assessment.

Table 1.0 – Dissolved Metals Exceedances in Groundwater

Well ID	Metal	Drinking Water Criterion	GSI Criterion	Result
MW-112S	Dissolved Arsenic	**10**	**10**	**32**
MW-114S	Dissolved Arsenic	**10**	**10**	**56**

- All results are expressed in µg/L.
- Criteria in **red** indicate an exceedance for that pathway.

VOCs: Exceedances were present as follows:

Table 2.0 – VOCs Exceedances in Groundwater

Well ID	VOC	Drinking Water Criterion	GSI Criterion	Result
MW-114S	cis-1,2-Dichloroethene	**70**	620	**131**
MW-114S	Trichloroethene	**5**	200	**172**
MW-114S	Vinyl Chloride	**2**	13	**7**

- All results are expressed in ug/L.
- Criteria in **red** indicate an exceedance for that pathway.

PFAS: Samples from monitoring wells MW-103S, MW-104S, MW-106RS, MW-108S, MW-110S, MW-112S, MW-114S and MW-117S were analyzed for PFAS during this sampling event. Several PFAS compounds were detected. The concentrations were compared to EGLE GR/NCC for Perfluorooctanoic acid (PFOA), Perfluorooctane sulfonic acid (PFOS), Perfluorononanoic acid (PFNA), Perfluorohexanoic acid (PFHxA), Perfluorohexane sulfonic acid (PFHxS), Perfluorobutane

sulfonic acid (PFBS), and (GenX). PFOA did not exceed the drinking water criterion in any sample, except MW-106SR. PFOS exceeded drinking water criterion (16 ng/L) and/or GSI criteria (12 ng/L) in MW-103S, and MW-114S. These results are similar to the previous PFAS results for the groundwater samples collected in September 2021.

A table of all groundwater sample analytical results for all groundwater samples collected on behalf of RACER is included in Appendix B as Attachment 2. Sample analytical results for the March 2022 sampling events are included in Appendix B as Attachment 3. Figure 4 illustrates the GSI and drinking water exceedances in groundwater identified in groundwater samples collected from 2017 through 2022. This date range includes sampling events from approximately one year before the July 2018 pilot test HRC injections, and all sampling events after. Figure 6 includes data boxes and exceedances for PFAS results. The Laboratory data validation report is included in Appendix D.

Note that elevated tetrachloroethene levels have been consistently detected in one up gradient well, MW-105S, since April 2012, and trichloroethene (TCE) has also consistently been detected in the same well, likely as a degradation product of the tetrachloroethene. This well is hydrogeologically downgradient from a former print shop located south of the Site.

The primary Site-specific constituents of concern are TCE and vinyl chloride, which appear to be exhibiting natural attenuation. PFOS concentrations have decreased or remained the stable.

While groundwater monitoring results have shown a general downward trend in concentrations of TCE Site-wide over time, TCE concentrations in MW-114S and MW-109S dropped substantially after HRC injection. This is likely due to the location of these two wells, which are expected to have been most affected by the HRC injection due to likely higher volumes of HRC reaching those wells in the short term, as well as generation of anerobic dechlorination conditions. MW-113S exhibited minor fluctuations in TCE concentrations, likely due to the greater distance from the HRC injection locations. The concentration of TCE in MW-114S has since rebounded. The limited variability of TCE concentrations in MW-111S is likely due to limited injection of HRC upgradient from this well relative to the other wells, as upgradient anerobic dechlorination conditions were not established (because areas upgradient were not subjected to HRC injection).

4.0 LABORAOTRY DATA VALIDATION SUMMARY

On March 16, 2022, Æ collected groundwater samples from eight monitoring wells at the RACER Flint West industrial Land site using USEPA low-stress protocols. One duplicate sample, one field blank, and one matrix spike sample and duplicate were collected. Samples were collected in appropriate laboratory-provided bottles with laboratory-provided preservatives and maintained on ice until delivery under complete chain-of-custody protocols to Merit Laboratories within appropriate holding times. No sample condition issues were identified in the field or upon laboratory receipt. Samples were analyzed by specified standard methods for VOCs, EGLE 28 PFAs, six total and dissolved metals, and total and dissolved chromium VI. Filtration and preservation for dissolved

metals and chromium VI were performed immediately upon laboratory receipt instead of during field collection.

Laboratory deliverables include four laboratory reports, quality control reports, and chains-of-custody, one from the sampling date for PFAS and one from the sampling date for VOCs and metals. Each laboratory report contained a case narrative, laboratory accreditation/certification information, laboratory contact information, analytical methods, and analyte reporting relative to method detection limits (MDLs) and reporting limits (RLs). Data qualifiers were identified and evaluated in this Laboratory Data Validation report (*see* Table 2). No samples were analyzed beyond their holding time. Metals and PFAS extraction dates identified in the laboratory reports indicate that extractions occurred within their approved timeframes.

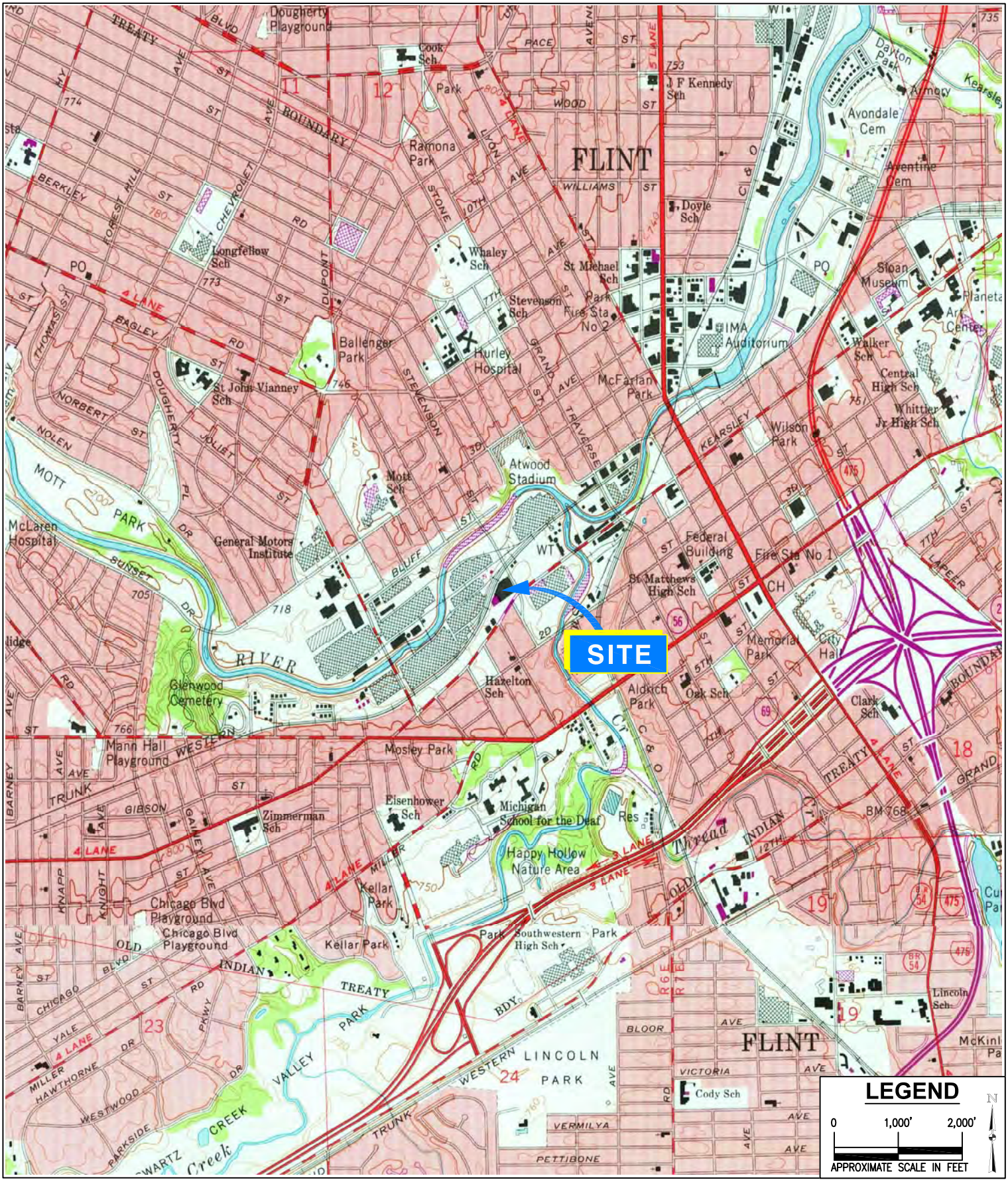
All surrogate recoveries were within their allowable ranges for each surrogate compound, except PFAS 4:2FTSA, 6:2FTSA, 8:2FTSA and VOCs 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene were elevated in the sample duplicate; and VOCs Bromomethane, Chloroethane, Styrene and 1,2,4-Trimethylbenzene were decreased in the sample duplicate, indicating satisfactory laboratory performance overall. Analysis of blank samples identified no indications of cross-contamination. Analysis of equipment blanks were non-detect except for low concentrations of metals and common solvent VOCs (less than RLs but greater than MDLs) used in laboratory and field equipment or decontamination. Field blanks identified only low levels of VOC and metal analytes consistent with cross-contamination identified in equipment blanks. Accordingly, no cross-contamination was indicated affecting contaminant concentrations less than RLs. Laboratory Control Spike (LCS) and LCS Duplicate analyses indicated potential for PFAS analyte PFOS to be reported low. Similarly, matrix spikes and their duplicates identified no interferences in detected analytes. No significant data qualifiers were identified in relation to detected analyte concentrations.

Based on the assessment detailed in the foregoing QA/QC summary, the laboratory data summarized in Table 2 are considered acceptable with the specific qualifications noted herein.

6.0 SCHEDULE

The second 2022 semi-annual monitoring event will be scheduled in September 2022 unless USEPA agrees to altering that schedule based upon USEPA's progress completing a Statement of Basis, Final Decision and review of the full scale in-situ remediation work plan.

APPENDIX A: FIGURES



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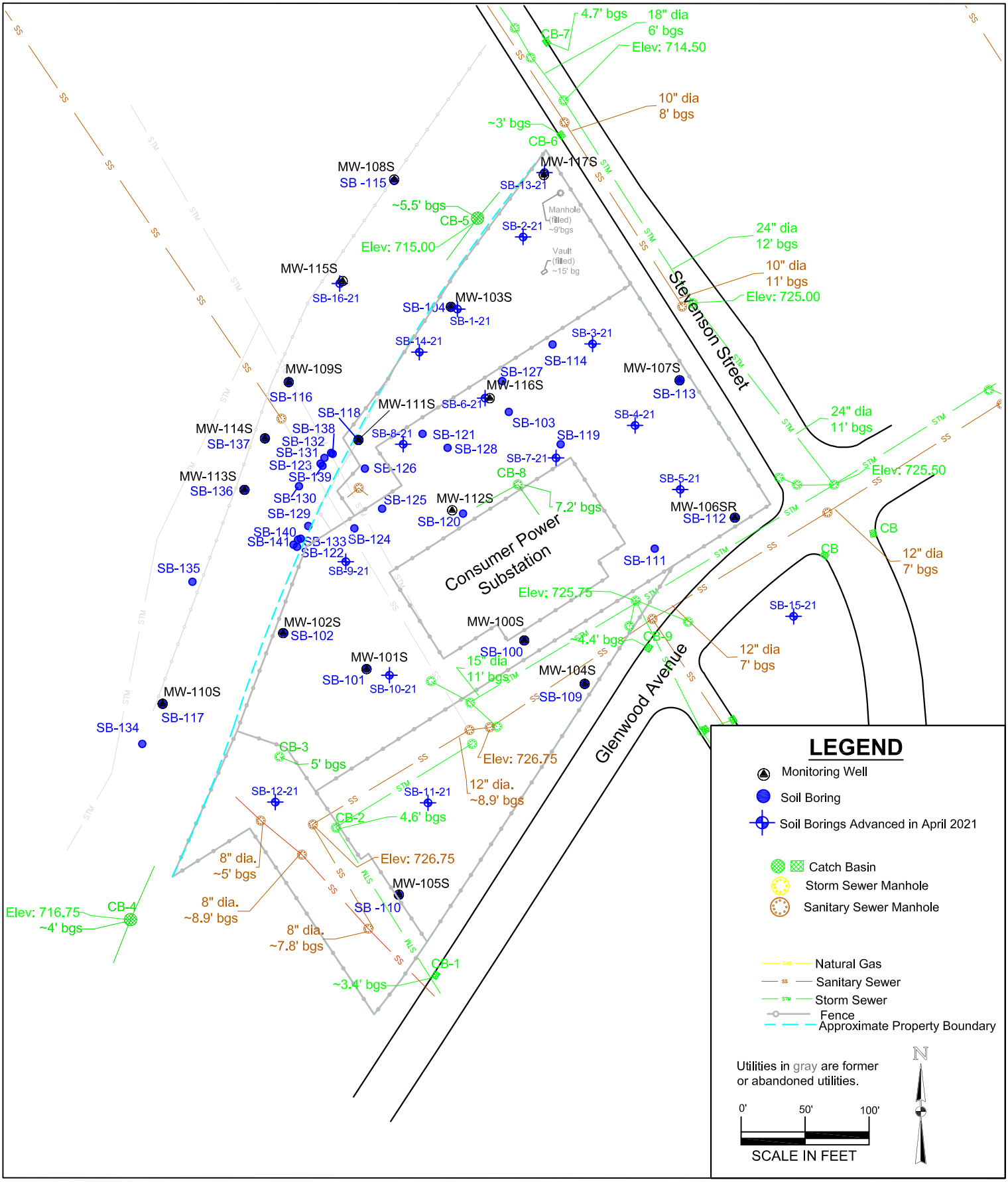
Site Location Map

RACER Flint West #12990
Glenwood Avenue & Stevenson Street
Flint, Michigan

SOURCE: USGS FLINT SOUTH QUADRANGLE (PROVISIONAL EDITION 1975)

DRAWING DATE:	CHECKED BY:
04/06/2020	MDS
PROJECT:	**FIGURE:**
11-4317-102	1



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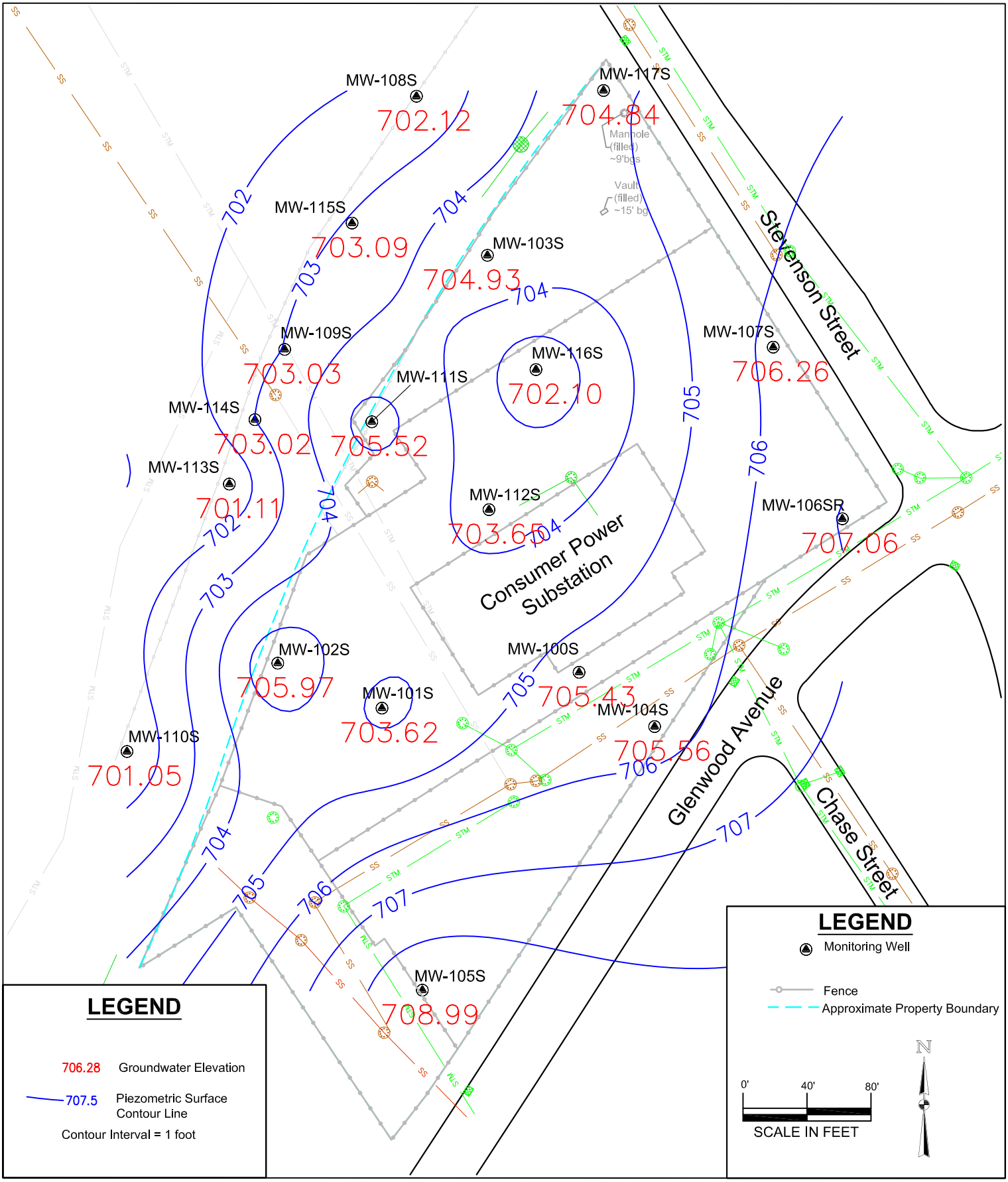
Site Map

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DATE:	CHECKED BY:
01/20/2022	MDS
PROJECT:	**FIGURE:**
11-4317-102	2



LEGEND

706.28 Groundwater Elevation

707.5 Piezometric Surface Contour Line

Contour Interval = 1 foot

LEGEND

Monitoring Well

Fence

Approximate Property Boundary

0' 40' 80'

SCALE IN FEET

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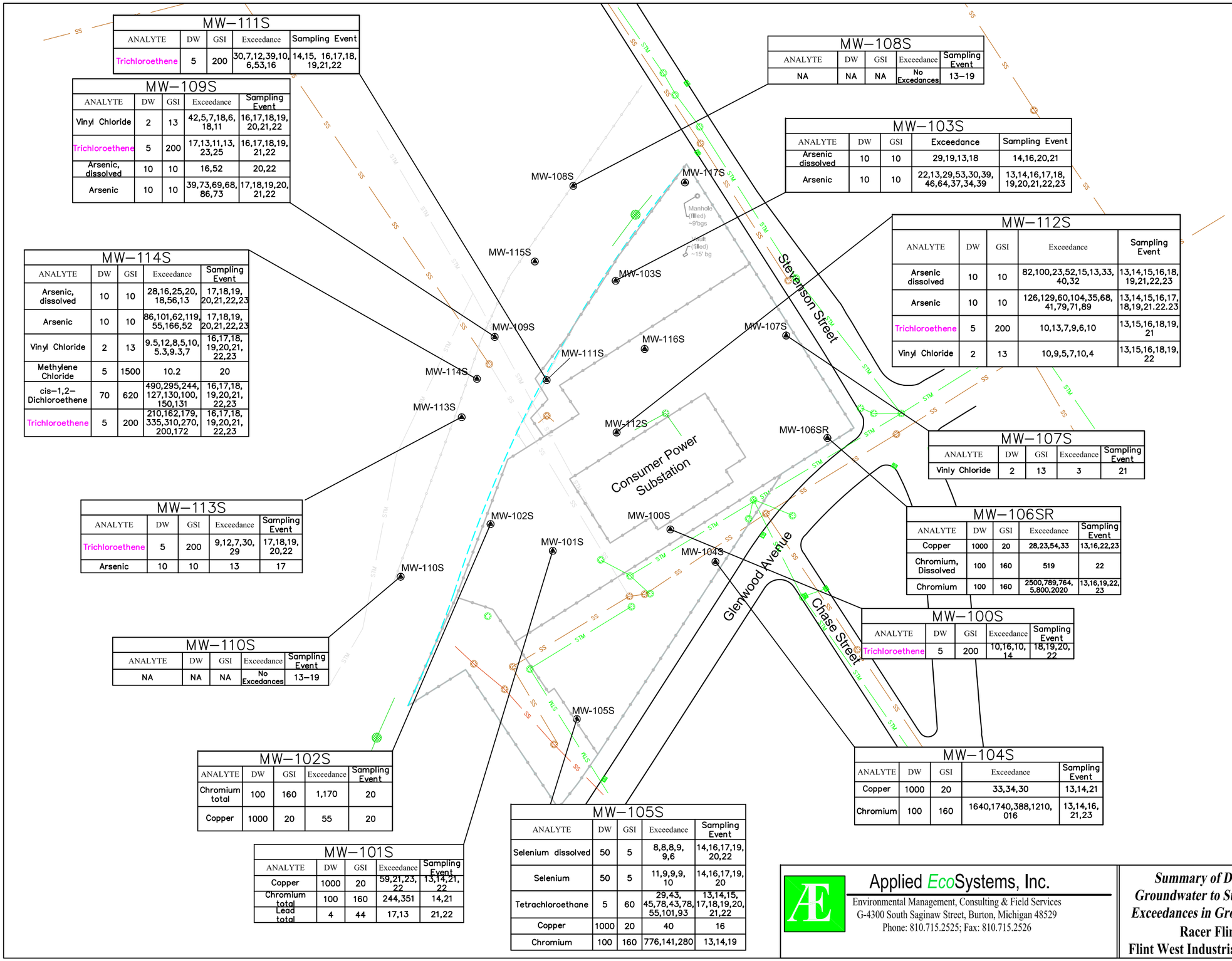
Groundwater Contour Map (March 15, 2022)

Racer Flint West -12990

Flint West Industrial Land, Flint, Michigan

DATE:	CHECKED BY:
04/12/2022	MDS
PROJECT:	FIGURE:
11-4317-102	3



MW–111S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Trichloroethene	5	200	30,7,12,39,10, 6,53,16	14,15, 16,17,18, 19,21,22

MW–109S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Vinyl Chloride	2	13	42,5,7,18,6, 18,11	16,17,18,19, 20,21,22
Trichloroethene	5	200	17,13,11,13, 23,25	16,17,18,19, 21,22
Arsenic, dissolved	10	10	16,52	20,22
Arsenic	10	10	39,73,69,68, 86,73	17,18,19,20, 21,22

MW–114S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Arsenic, dissolved	10	10	28,16,25,20, 18,56,13	17,18,19, 20,21,22,23
Arsenic	10	10	86,101,62,119, 55,166,52	17,18,19, 20,21,22,23
Vinyl Chloride	2	13	9.5,12,8,5,10, 5.3,9.3,7	16,17,18, 19,20,21, 22,23
Methylene Chloride	5	1500	10.2	20
cis–1,2–Dichloroethene	70	620	490,295,244, 127,130,100, 150,131	16,17,18, 19,20,21, 22,23
Trichloroethene	5	200	210,162,179, 335,310,270, 200,172	16,17,18, 19,20,21, 22,23

MW–113S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Trichloroethene	5	200	9,12,7,30, 29	17,18,19, 20,22
Arsenic	10	10	13	17

MW–110S

ANALYTE	DW	GSI	Exceedance	Sampling Event
NA	NA	NA	No Excedances	13–19

MW–102S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Chromium total	100	160	1,170	20
Copper	1000	20	55	20

MW–101S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Copper	1000	20	59,21,23, 22	13,14,21, 22
Chromium total	100	160	244,351	14,21
Lead total	4	44	17,13	21,22

MW–105S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Selenium dissolved	50	5	8,8,8,9, 9,6	14,16,17,19, 20,22
Selenium	50	5	11,9,9,9, 10	14,16,17,19, 20
Tetrachloroethane	5	60	29,43, 45,78,43,78, 55,101,93	13,14,15, 17,18,19,20, 21,22
Copper	1000	20	40	16
Chromium	100	160	776,141,280	13,14,19

MW–108S

ANALYTE	DW	GSI	Exceedance	Sampling Event
NA	NA	NA	No Excedances	13–19

MW–103S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Arsenic dissolved	10	10	29,19,13,18	14,16,20,21
Arsenic	10	10	22,13,29,53,30,39, 46,64,37,34,39	13,14,16,17,18, 19,20,21,22,23

MW–112S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Arsenic dissolved	10	10	82,100,23,52,15,13,33, 40,32	13,14,15,16,18, 19,21,22,23
Arsenic	10	10	126,129,60,104,35,68, 41,79,71,89	13,14,15,16,17, 18,19,21.22.23
Trichloroethene	5	200	10,13,7,9,6,10	13,15,16,18,19, 21
Vinyl Chloride	2	13	10,9,5,7,10,4	13,15,16,18,19, 22

MW–107S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Vinly Chloride	2	13	3	21

MW–106SR

ANALYTE	DW	GSI	Exceedance	Sampling Event
Copper	1000	20	28,23,54,33	13,16,22,23
Chromium, Dissolved	100	160	519	22
Chromium	100	160	2500,789,764, 5,800,2020	13,16,19,22, 23

MW–100S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Trichloroethene	5	200	10,16,10, 14	18,19,20, 22

MW–104S

ANALYTE	DW	GSI	Exceedance	Sampling Event
Copper	1000	20	33,34,30	13,14,21
Chromium	100	160	1640,1740,388,1210, 016	13,14,16, 21,23

LEGEND

Monitoring Well

GSI Ground Water to Surface Water Interface.
DW Drinking Water Threshold
GRCC General Residential Cleanup Criteria
NA – Not applicable

Laboratory analytical data presented in parts per billion (ug/L)

Fence

Groundwater Sampling Events*	
June 2017	13
January 2018	14
May 2018	15
Aug/Sept 2018	16
February 2019	17
July 2019	18
February 2020	19
August 2020	20
March 2021	21
September 2021	22
March 2023	23

*–This date range includes sampling events from approximately one year before the July 2018 pilot test HRC injections, and all sampling events after.

N

0 50 100

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Summary of Drinking Water and Groundwater to Surface Water Interface Exceedances in Groundwater 2017 to 2022
Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DRAWING DATE:	CHECKED BY:
04/13/2022	MDS
PROJECT:	FIGURE:
11-4317-102	4

DATE:	04/08/2020	CHECKED BY:	MDS
PROJECT:	11-4317-102	FIGURE:	5

Summary of Drinking Water and GSI Exceedances in Soil
2012 - 2019

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

01/16/19	SB–139			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	21,000 3,440	16' 18'
Methylene Chloride	5	1,500	230 32	16' 18'
Vinyl chloride	40	260	ND 42	16' 18'
cis-1,2-Dichloroethene	1,400	12,000	1,800 3,440	16' 18'

04/22/14	SB–131			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	12,160	18'
Vinyl chloride	40	260	90	18'
cis-1,2-Dichloroethene	1,400	12,000	2,820	18'

12/11/2012	SB–116			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Vinyl Chloride	40	260	260	12–13'
cis-1,2-Dichloroethene	1,400	12,000	2,160	12–13'

7/10/2014	SB–132			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	29,500 / 13,700	11.5–12' 14.5–15'
Vinyl chloride	40	260	180 / 89	11.5–12' 14.5–15'
cis-1,2-Dichloroethene	1,400	12,000	2,200	11.5–12'

01/16/19	SB–138			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	2,880 2,300	15' 18'
Methylene Chloride	5	1,500	22 25.7	15' 18'
cis-1,2-Dichloroethene	1,400	12,000	470 550	15' 18'

12/11/2012	SB–118			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Vinyl Chloride	40	260	250	16–17'
cis-1,2-Dichloroethene	1,400	12,000	11,960	16–17'

03/13/2012	SB–104			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Benezene	100	4,000	210	7–8'

12/22/14	SB–137			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	4,250	18'

12/22/14	SB–137			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Vinyl chloride	40	260	56	20.5'

12/22/14	SB–136			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	8,760	19'

12/22/14	SB–136			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	9,390	20'

12/10/2012	SB–114			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	1,220	20–21'
Phenanthrene	56,000	2,100	2,700	7–8'

04/22/14	SB–130			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	6,080	18'
Vinyl chloride	40	260	73	18'
cis-1,2-Dichloroethene	1,400	12,000	6,380	18'

4/30/2013	SB–121			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	400	23–24'
Vinyl Chloride	40	260	110	23–24'
cis-1,2-Dichloroethene	1,400	12,000	2,970	23–24'

04/22/14	SB–129			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	6,170	18'

12/06/2012	SB–112			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Naphthalene	35,000	730	840	3.5–4.5'
1,2,4–Trimethylbenzene	2,100	570	600	3.5–4.5'
Vinyl Chloride	40	260	80	3.5–4.5'

01/16/19	SB–140			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	13,100 2,870	16' 19'
Methylene Chloride	5	1,500	260 30	16' 19'
cis-1,2-Dichloroethene	1,400	12,000	3,500 2,870	16' 19'

12/22/14	SB–135			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	7890.0	19'
12/22/14	SB–135			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	6540.0	21'

12/11/2012	SB–117			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	5,980	18–19'

12/22/14	SB–134			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	2,040	20'

01/16/19	SB–141			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	180 6,150 3,370	16' 18 19'
Methylene Chloride	5	1,500	27 25 26	16' 18 19'
cis-1,2-Dichloroethene	1,400	12,000	15 2,900 860	16' 18 19'

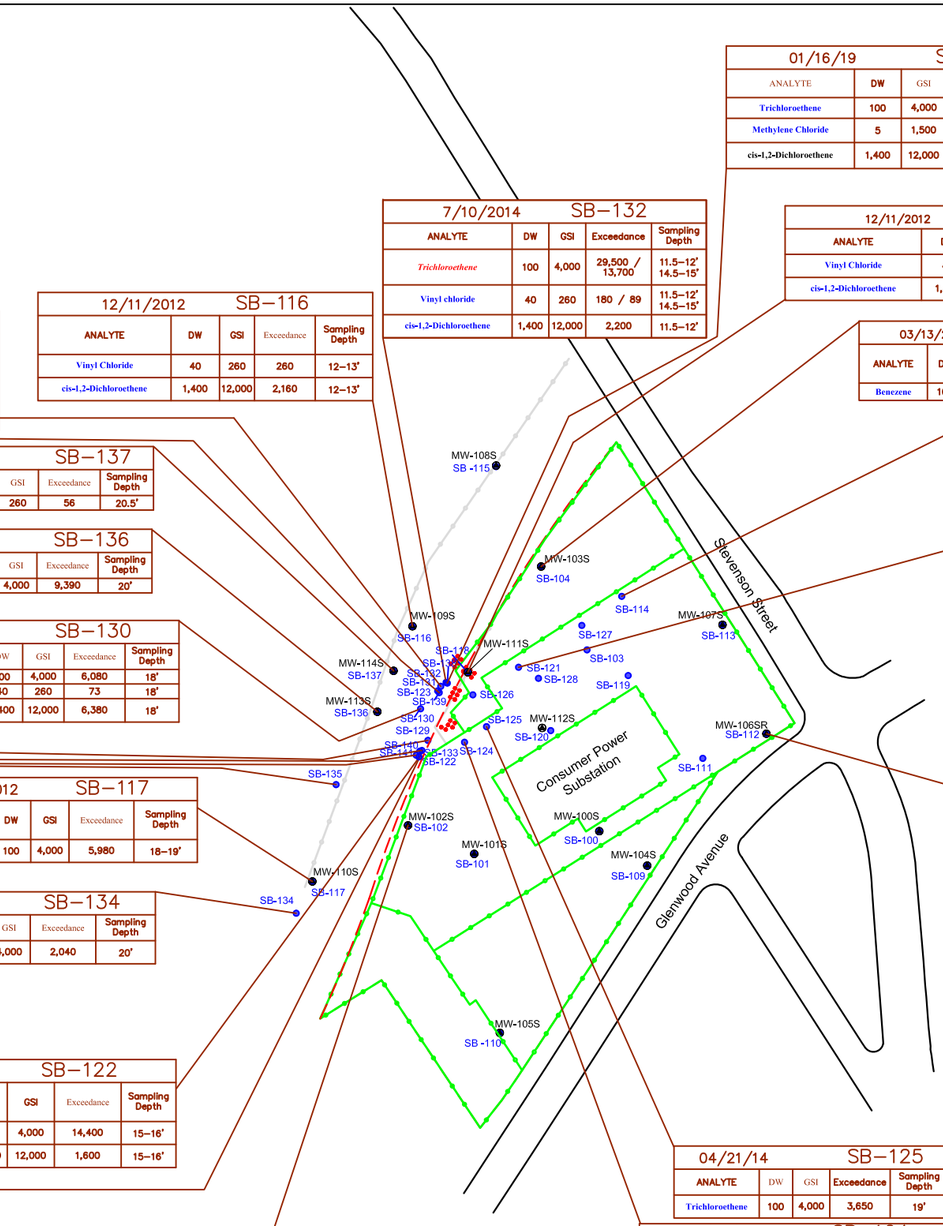
4/30/2013	SB–122			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	14,400	15–16'
cis-1,2-Dichloroethene	1,400	12,000	1,600	15–16'

7/10/2014	SB–133			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4000	11,680 / 10,860 7,520	16.5–17' 18–19' 19.5–20'
Vinyl Chloride	40	260	46	16.5–17'
cis-1,2-Dichloroethene	1,400	12,000	1,990	16.5–17'

3/08/2012	SB–102			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	330	6–7'

04/21/14	SB–125			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	3,650	19'

04/21/14	SB–124			
ANALYTE	DW	GSI	Exceedance	Sampling Depth
Trichloroethene	100	4,000	1,420	21'



LEGEND

- Monitoring Well
- Soil boring
- Multiple soil borings in one location.
- HRC Injection boring

Analyte Exceeds GSI and DW criteria

Analyte Exceeds DW criteria only

Analyte Exceeds GSI criteria only

Laboratory analytical data presented in parts per billion (ug/Kg)

Fence

0' 75' 150'

SCALE IN FEET

N

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MW-114S

ANALYTE	DW	GSI	9/5/18	9/5/18	2/27/20	8/19/20	3/3/21	9/15/21	3/16/22
PFBS	420	NC	1.7	<9,5	<10	1,8	1.8	<2,0	1.5
PFHxS	51	NC	2.4	<9.5	<10	2.3	1.8	1.5	<2,0
PFHxS-LN	NC	NC	<0,88	<9.5	<10	1.6	NA	1.8	<2,0
PFHpS	NC	NC	<0,88	<9,5	<10	<1,9	<2,0	<2,0	<2,0
PFOS	16	12	26	31	31	29	22	21	16
PFBA	NC	NC	2.7	<9,5	<20	<9,7	<10	<2,0	<9,8
PFPeA	NC	NC	3.6	<9,5	<10	1.1	<4,1	<2,0	<3,9
PFHxA	400,000	NC	3,3	<9.5	<10	<1,9	1.6	<2,0	1.7
PFHpA	NC	NC	2.2	<9,5	<10	<1,9	<2,0	<2,0	<2,0
PFOA	8	12,000	4,3	<9,5	<10	1.8	<2,0	1.7	2.4
PFNA	6	NC	1,3	<9,5	<10	<1,9	<2,0	<2,0	<2,0
PFUnDA	NC	NC	<0,31	<9,5	<10	<1,9	<2,0	<2,0	<2,0
PFDoDA	NC	NC	<0,46	<9.5	<10	<1,9	<2,0	<2,0	<2,0
PFTrDA	NC	NC	<0,75	<9,5	<10	<1,9	<2,0	<2,0	<2,0
PFTeDA	NC	NC	1.9	<9,5	<10	<1,9	<2,0	<2,0	<2,0

MW-109S

ANALYTE	DW	GSI	9/5/18	7/17/19	2/27/20	8/19/20	3/3/21	9/15/21
PFBS	420	NC	2.9	<9,7	<9,9	2.7	2.2	1.6
PFHxS	51	NC	3.2	<9,7	<9,9	2.5	1.9	1.9
PFHxS-LN	NC	NC	<1.2	<9,7	<9,9	1.8	NA	<2,0
PFHpS	NC	NC	2,6	<9,7	<9,9	<2,0	<1,9	<2,0
PFOS	16	12	27	28	31	29	21	23
PFBA	NC	NC	2,9	<19	5.5	<10	<9,7	<9,8
PFPeA	NC	NC	<1.1	<9,7	<9,9	3,6	14	2.1
PFHxA	400,000	NC	1,7	<9,7	1.4	3.2	7,6	<2,0
PFHpA	NC	NC	<1.2	<9,7	<9,9	1.5	2	<2,0
PFOA	8	12,000	2,6	<9,7	2.3	3.1	3,6	**1.9**
PFNA	6	NC	1.2	<9,7	<9,9	<2,0	<1,9	<2,0
PFUnDA	NC	NC	<0,31	<9,7	<9,9	<2,0	<1,9	<2,0
PFDoDA	NC	NC	<0,46	<9,7	<9,9	<2,0	<1,9	<2,0
PFTrDA	NC	NC	<0,75	<9,7	<9,9	<2,0	<1,9	<2,0
PFTeDA	NC	NC	1.7	<9,7	<9,9	<2,0	<1,9	<2,0

MW-115S

ANALYTE	DW	GSI	11/18/21
PFHxA	400,000	NC	<4,1
PFBS	420	NC	2,3
PFOA	8	12,000	2,3
PFHxS	51	NC	2,9
PFOS	16	12	27

MW-108S

ANALYTE	DW	GSI	8/30/18	7/17/19
PFBS	420	NC	1.7	<9,7
PFHxS	51	NC	2.9	<9,7
PFHpS	NC	NC	<0,88	<9,7
PFOS	16	12	6	11
PFBA	NC	NC	<2,7	<19
PFPeA	NC	NC	<1.1	<9,7
PFHxA	400,000	NC	<0,92	<9,7
PFHpA	NC	NC	<1.2	<9,7
PFOA	8	12,000	0,58	<9,7
PFNA	6	NC	<0,94	<9,7
PFUnDA	NC	NC	<0,31	<9,7
PFDoDA	NC	NC	<0,46	<9,7
PFTrDA	NC	NC	<0,75	<9,7
PFTeDA	NC	NC	<1.2	<9,7

MW-117S

ANALYTE	DW	GSI	11/18/21	3/16/22
PFHxA	400,000	NC	1,9	<2,0
PFBS	420	NC	1,4	<2,0
PFOA	8	12,000	2,8	<2,0
PFHxS	51	NC	<1,9	<2,0
PFOS	16	12	3,1	<2,0

MW-103S

ANALYTE	DW	GSI	9/5/18	1/17/19	7/17/19	2/28/20	8/19/20	3/3/21	9/16/21	3/16/22
PFBS	420	NC	2,2	<10	<9,4	<9,5	<2,0	1,6	<2,0	1,6
PFHxS	51	NC	<0,94	<20	<9,4	2,7	2,2	5,9	5	2,1
PFHxS-LN	NC	NC	<0,94	<20	<9,4	<9,5	2,2	NA	3,1	2,1
PFHpS	NC	NC	<0,88	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
PFOS	16	12	91	90	93	84	120	91	46	74
PFBA	NC	NC	<2,7	<137	<19	<19	<10	<28	<16	<39
PFPeA	NC	NC	<1.1	<10	<9,4	<9,5	<4,0	<4,3	<3,9	<3,9
PFHxA	400,000	NC	<0,92	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
PFHpA	NC	NC	<1,2	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
PFOA	8	12,000	2,6	<10	<9,4	<9,5	<2,0	<2,2	2,7	2,6
PFNA	6	NC	1,1	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
PFDA	NC	NC	0,53	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
PFUnDA	NC	NC	<0,31	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
PFDoDA	NC	NC	<0,46	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
PFTrDA	NC	NC	<0,75	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
PFTeDA	NC	NC	<1,2	<10	<9,4	<9,5	<2,0	<2,2	<2,0	<2,0
EtFOSAA	NC	NC	0,90	<10	<9,4	<9,5	<2,0	<<5,4	<3,9	<3,9

MW-111S

ANALYTE	DW	GSI	1/28/18	5/29/18	8/30/18	7/17/19	2/27/20	8/19/20	3/3/21	9/16/21
PFBS	420	NC	<1,9	<0,9	2,4	<9,6	<10	1,5	1,7	<2,0
PFHxS	51	NC	1,9	1,6	3,8	<9,6	<10	1,9	<2,1	<2,0
PFHpS	NC	NC	<1,9	<0,88	<0,88	<9,6	<10	<2,1	<2,1	<2,0
PFOS	16	12	44	47	59	36	32	33	25	11
PFBA	NC	NC	4,8	<2,7	<2,7	<9,6	<20	<10	<10	<2,0
PFPeA	NC	NC	<1,9	<1,1	1,3	<9,6	<10	2,4	4,1	2,9
PFHxA	400,000	NC	2,6	<0,92	<0,92	<9,6	<10	1,6	2,3	<2,0
PFHpA	NC	NC	<1,9	<1,2	<1,2	<9,6	<10	<2,1	<2,1	<2,0
PFOA	8	12,000	6,1	1,7	1,7	<9,6	<10	3	2,1	2
PFNA	6	NC	<1,9	<0,94	<0,94	<9,6	<10	<2,1	<2,1	<2,0
PFUnDA	NC	NC	<1,9	<0,31	<0,31	<9,6	<10	<2,1	<2,1	<2,0
PFDoDA	NC	NC	<1,9	<0,46	<0,46	<9,6	<10	<2,1	<2,1	<2,0
PFTrDA	NC	NC	<1,9	0,78	<0,75	<9,6	<10	<2,1	<2,1	<2,0
PFTeDA	NC	NC	<1,9	<1,2	<1,2	<9,6	<10	<2,1	<2,1	<2,0

MW-113S

ANALYTE	DW	GSI	8/30/18	7/17/19	2/27/20	8/19/20	3/3/21	9/15/21
PFBS	420	NC	5	<9,5	<9,5	1,8	1,8	1,6
PFHxS	51	NC	2,6	<9,5	<9,5	3,1	<2,0	1.8
PFHxS-LN	NC	NC	<0,88	<9,5	<9,5	2,6	NA	<2,1
PFHpS	NC	NC	<0,88	<9,5	<9,5	<1,9	<2,0	<2,1
PFOS	16	12	13	20	6,2	26	12	23
PFBA	NC	NC	7,1	<19	<19	<9,7	<10	<2,1
PFPeA	NC	NC	<1,1	<9,5	<9,5	1	<4,0	<2,1
PFHxA	400,000	NC	1	<9,5	<9,5	<1,9	<2,0	<2,1
PFHpA	NC	NC	1,3	<9,5	<9,5	<1,9	<2,0	<2,1
PFOA	8	12,000	2,6	<9,5	<9,5	<1,9	<2,0	1.7
PFNA	6	NC	<0,94	<9,5	<9,5	<1,9	<2,0	<2,1
PFUnDA	NC	NC	<0,31	<9,5	<9,5	<1,9	<2,0	<2,1
PFDoDA	NC	NC	<0,46	<9,5	<9,5	<1,9	<2,0	<2,1
PFTrDA	NC	NC	<0,75	<9,5	<9,5	<1,9	<2,0	<2,1
PFTeDA	NC	NC	<1,2	<9,5	<9,5	<1,9	<2,0	<2,1

MW-112S

ANALYTE	DW	GSI	1/28/18	5/29/18	9/5/18	2/27/20	8/18/20	3/2/21	9/16/21	3/16/22
PFBS	420	NC	8,1	<0,9	1,4	<9,4	<2,0	1,7	<2,0	1.5
PFHxS	51	NC	<1,9	<0.94	<0.94	<9,4	<2,0	<2,1	<2,0	<2,1
PFHpS	NC	NC	<1,9	<0,88	<0.88	<9,4	<2,0	<2,1	<2,0	<2,1
PFOS	16	12	16	27	10	22	11	9	6,7	10
PFBA	NC	NC	180	41	48	<19	<9,9	<21	<2,0	<31
PFPeA	NC	NC	<1,9	1,7	<1,1	<9,4	<2,0	<2,1	2.9	<4,1
PFHxA	400,000	NC	<1,9	<0.92	<0.92	<9,4	<2,0	<2,1	<2,0	<2,1
PFHpA	NC	NC	<1,9	<1,2	<1,2	<9,4	<2,0	<2,1	<2,0	<2,1
PFOA	8	12,000	4,2	2,5	2,2	<9,4	<2,0	<2,1	<2,0	<2,1
PFNA	6	NC	<1,9	1,8	<0,94	<9,4	<2,0	<2,1	<2,0	<2,1
PFUnDA	NC	NC	<1,9	0,61	<0,31	<9,4	<2,0	<2,1	<2,0	<2,1
PFDoDA	NC	NC	<1,9	<0,46	<0,46	<9,4	<2,0	<2,1	<2,0	<2,1
PFTrDA	NC	NC	<1,9	0,85	<0,75	<9,4	<2,0	<2,1	<2,0	<2,1
PFTeDA	NC	NC	<1,9	<1,2	<1,2	<9,4	<2,0	<2,1	<2,0	<2,1

MW-116S

ANALYTE	DW	GSI	11/18/21
PFHxA	400,000	NC	<1,9
PFBS	420	NC	<1,9
PFOA	8	12,000	2,0
PFHxS	51	NC	<1,9
PFOS	16	12	22

MW-107S

ANALYTE	DW	GSI	8/30/18	2/25/20	8/18/20	3/2/21	9/15/21
PFBS	420	NC	<0,90	1,9	<2,1	1,5	<1,9
PFHxS	51	NC	2,7	<9,6	<2,1	2,9	<1,9
PFHpS	NC	NC	<0,88	<9,6	<2,1	<2,1	<1,9
PFOS	16	12	18	14	24	16	6.6
PFBA	NC	NC	<2,7	<19	<10	<10	19
PFPeA	NC	NC	<1.1	<9,6	<2,1	<4,2	<3,9
PFHxA	400,000	NC	<0,92	<9,6	<2,1	<2,1	<1,9
PFHpA	NC	NC	<1,2	<9,6	<2,1	<2,1	<1,9
PFOA	8	12,000	2,1	<9,6	<2,1	1,9	<1,9
PFNA	6	NC	<0,94	<9,6	<2,1	<2,1	<1,9
PFUnDA	NC	NC	<0,31	<9,6	<2,1	<2,1	<1,9
PFDoDA	NC	NC	<0,46	<9,6	<2,1	<2,1	<1,9
PFTrDA	NC	NC	<0,75	<9,6	<2,1	<2,1	<1,9
PFTeDA	NC	NC	<1,2	<9,6	<2,1	<2,1	<1,9

MW-102S

ANALYTE	DW	GSI	1/28/18	5/29/18	8/30/18	07/17/19
PFBS	420	NC	<2	1,3	2	<9,7
PFHxS	51	NC	<2	2	6,1	<9,7
PFHpS	NC	NC	<2	0,81	2,4	<9,7
PFOS	16	12	7	12	11	11
PFBA	NC	NC	4,8	<2,7	3,2	<19
PFPeA	NC	NC	2,3	1,2	1,4	<9,7
PFHxA	400,000	NC	2,5	1,8	4,1	<9,7
PFHpA	NC	NC	<2	1,7	2	<9,7
PFOA	8	12,000	4,1	4,2	6,1	<9,7
PFNA	6	NC	<2	1	<0,94	<9,7
PFUnDA	NC	NC	<2	<0,31	<0,31	<9,7
PFDoDA	NC	NC	<2	<0,46	<0,46	<9,7
PFTrDA	NC	NC	<2	<0,75	<0,75	<9,7
PFTeDA	NC	NC	<2	<1,2	<1,2	<9,7

MW-106SR

ANALYTE	DW	GSI	9/5/18	2/25/20	8/18/20	9/14/21	3/16/22
PFHxA	400,000	NC	<0,31	<10	3.7	3,8	3,8
PFBS	420	NC	4.6	4.5	3.2	3.6	3.6
PFHxS	51	NC	3.3	<10	3.1	2.1	1.6
PFHxS-LN	NC	NC	<0.94	<10	2.3	1.6	<1.9
PFHpA	NC	NC	<0,94	<10	3	2.1	2.2
PFHpS	NC	NC	1.3	<10	<2,0	2.5	<1.9
PFOS	16	12	7.3	7.3	7.3	18	11
PFBA	NC	NC	5.9	8,1	<10	<9,6	<9,7
PFPeA	NC	NC	1.1	<10	3.1	3.3	1.2
PFHxA	400,000	NC	2	3.5	3.7	3.8	2,0
PFHpA	NC	NC	2	2.8	<2,0	2.1	2.2
PFOA	8	12,000	12	8.7	11	18	15
PFNA	6	NC	<0,94	<10	<2,0	<1,9	<1,9
PFDA	NC	NC	0.58	<10	<2,0	<1,9	<1,9
PFUnDA	NC	NC	<0,31	<10	<2,0	<1,9	<1,9
PFDoDA	NC	NC	<0,46	<10	<2,0	<1,9	<1,9
PFTrDA	NC	NC	<0,75	<10	<2,0	<1,9	<1,9
PFTeDA	NC	NC	2.8	<10	<2,0	<1,9	<1,9
EtFOSSAA	NC	NC	<0,83	<10	<2,0	<1,9	<1,9

MW-110S

ANALYTE	DW	GSI	8/30/18	7/17/19	2/27/20	8/19/20	3/3/21	9/15/21	3/16/22
PFBS	420	NC	3.6	<9,6	<9,5	1.9	3	1.7	2.3
PFHxS	51	NC	4.3	<9,6	<9,5	2	<2,0	<2,1	<2,0
PFHpS	NC	NC	<0,88	<9,6	<9,5	<2,0	<2,0	<2,1	<2,0
PFOS	16	12	8.5	<9,6	<9,5	5.9	<2,0	5.8	<2,0
PFBA	NC	NC	6.7	20	<19	<10	<10	<10	<9,8
PFPeA	NC	NC	3	<9,6	<9,5	1,1	<4,0	1.5	<3,9
PFHxA	400,000	NC	4,8	<9,6	<9,5	<2,0	<2,0	<2,1	<2,0
PFHpA	NC	NC	3.7	<9,6	<9,5	<2,0	<2,0	<2,1	<2,0
PFOA	8	12,000	11	<9,6	<9,5	2.8	<2,0	2,7	<2,0
PFNA	6	NC	<0,94	<9,6	<9,5	<2,0	<2,0	<2,1	<2,0
PFUnDA	NC	NC	<0,31	<9,6	<9,5	<2,0	<2,0	<2,1	<2,0
PFDoDA	NC	NC	<0,46	<9,6	<9,5	<2,0	<2,0	<2,1	<2,0
PFTrDA	NC	NC	<0,75	<9,6	<9,5	<2,0	<2,0	<2,1	<2,0
PFTeDA	NC	NC	<1,2	<9,6	<9,5	<2,0	<2,0	<2,1	<2,0

MW-101S

ANALYTE	DW	GSI	1/28/18	5/29/18	9/5/18	2/25/20	8/18/20	3/3/21	9/14/21
PFBS	420	NC	<1,9	<0,9	1,4	2,3	1,9	1,9	**<1.9**
PFHxS	51	NC	<1,9	1,4	1,9	<10	1,9	<2,1	<1,9
PFHpS	NC	NC	<1,9	<0,88	1,2	<10	<1,9	<2,1	<1,9
PFHpS-LN	NC	NC	<1,9	<0,88	<0,31	<10	1,6	NA	**<1.9**
PFOS	16	12	35	12	33	21	30	25	37
PFBA	NC	NC	3,1	<2,7	3,8	<20	<9,7	<10	5.5
PFPeA	NC	NC	<1,9	<1,1	1,2	<10	1,9	<4,1	**2.6**
PFHxA	400,000	NC	<1,9	<0,92	1,5	1,7	<1,9	<2,1	**2.1**
PFHpA	NC	NC	<1,9	<1,2	<1,2	<10	<1,9	<2,1	<1,9
PFOA	8	12,000	4,4	2	4,5	<10	3,2	2,5	5.5
PFNA	6	NC	<1,9	1,1	1,2	<10	<1,9	<2,1	<1,9
PFUnDA	NC	NC	<1,9	<0,31	<0,31	<10	<1,9	<2,1	<1,9
PFDoDA	NC	NC	<1,9	0,51	<0,46	<10	<1,9	<2,1	<1,9
PFTrDA	NC	NC	<1,9	0,82	<0,75	<10	<10	<2,1	<1,9
PFTeDA	NC	NC	<1,9	1,4	<1,2	<10	<10	<4,1	**<3.9**

MW-105S

ANALYTE	DW	GSI	9/5/18
PFBS	420	NC	1.8
PFHxS	51	NC	12
PFHpS	NC	NC	2.5
PFOS	16	12	<1
PFBA	NC	NC	3.2
PFPeA	NC	NC	<1.1
PFHxA	400,000	NC	1.6
PFHpA	NC	NC	<1.2
PFOA	8	12,000	4.5
PFNA	6	NC	<0,94
PFUnDA	NC	NC	<0.31
PFDoDA	NC	NC	<0.46
PFTrDA	NC	NC	<0.75
PFTeDA	NC	NC	<1.2

MW-100S

ANALYTE	DW	GSI	9/5/18	2/25/20	8/18/20	9/14/21
PFBS	420	NC	2.5	2,7	1.6	1.6
PFHxS	51	NC	4	<9,8	<2.0	<2.0
PFHpS	NC	NC	1,4	<9,8	<2.0	<2.0
PFOS	16	12	20	20	18	9.1
PFBA	NC	NC	<2,7	<20	<9,8	<9,8
PFPeA	NC	NC	<1,1	<9,8	<3.9	1,1
PFHxA	400,000	NC	1	<9,8	<2,0	<2,0
PFHpA	NC	NC	<1,2	<9,8	<2,0	<2,0
PFOA	8	12,000	2	<9,8	<2,0	<2,0
PFNA	6	NC	<0,94	<9,8	<2,0	<2,0
PFUnDA	NC	NC	<0,31	<9,8	<2,0	<2,0
PFDoDA	NC	NC	<0,46	<9,8	<2,0	<2,0
PFTrDA	NC	NC	<0,75	<9,8	<2,0	<2,0
PFTeDA	NC	NC	<1,2	<9,8	<2,0	<2,0

MW-104S

ANALYTE	DW	GSI	9/5/18
PFBS	420	NC	1.3
PFHxS	51	NC	2,1
PFHpS	NC	NC	<0.88
PFOS	16	12	<1
PFBA	NC	NC	<2,7
PFPeA	NC	NC	<1,1
PFHxA	400,000	NC	1,2
PFHpA	NC	NC	<1,2
PFOA	8	12,000	0.79
PFNA	6	NC	<0,94
PFUnDA	NC	NC	<0,31
PFDoDA	NC	NC	<0,46
PFTrDA	NC	NC	<0,75
PFTeDA	NC	NC	1,6

LEGEND

Monitoring Well

DW = Drinking Water Threshold.

GSI = Ground Water to Surface Water Interface based on Rule 57.

NC = Insufficient data to develop criterion/no criterion.

PFAS criteria based on EGLE proposed drinking water criteria for selected PFAS compounds.

= Compound exceeds GSI criteria

= Compound exceeds DW criteria.

= Compound exceeds GSI and DW criteria.

Concentrations presented in parts per trillion (ng/L).

Only detected constituents listed.

PFA Constituents

Perfluorobutane sulfonic acid	(PFBS)
Perfluorohexane sulfonic acid	(PFHxS)
Perfluorohexane Sulfonic acid–LN	(PFHxS–LN)
Perfluoroheptane sulfonic acid	(PFHpS)
Perfluorooctane sulfonic acid	(PFOS)
Perfluorobutanoic acid	(PFBA)
Perfluoropentanoic acid	(PFPeA)
Perfluorohexanoic acid	(PFHxA)
Perfluoroheptanoic acid	(PFHpA)
Perfluorooctanoic acid	(PFOA)
Perfluorononanoic acid	(PFNA)
Perfluorodecanoic acid	(PFDA)
Perfluoroundecanoic acid	(PFUnDA)
Perfluorododecanoic acid	(PFDoDA)
Perfluorotridecanoic acid	(PFTrDA)
Perfluorotetradecanoic acid	(PFTeDA)
N–Ethyl perfluorooctane sulfonamidoacetic acid	(EtFOSSAA)

= Monitoring well included in proposed revised semi–annual groundwater monitoring network.

N

0 80 160

SCALE IN FEET

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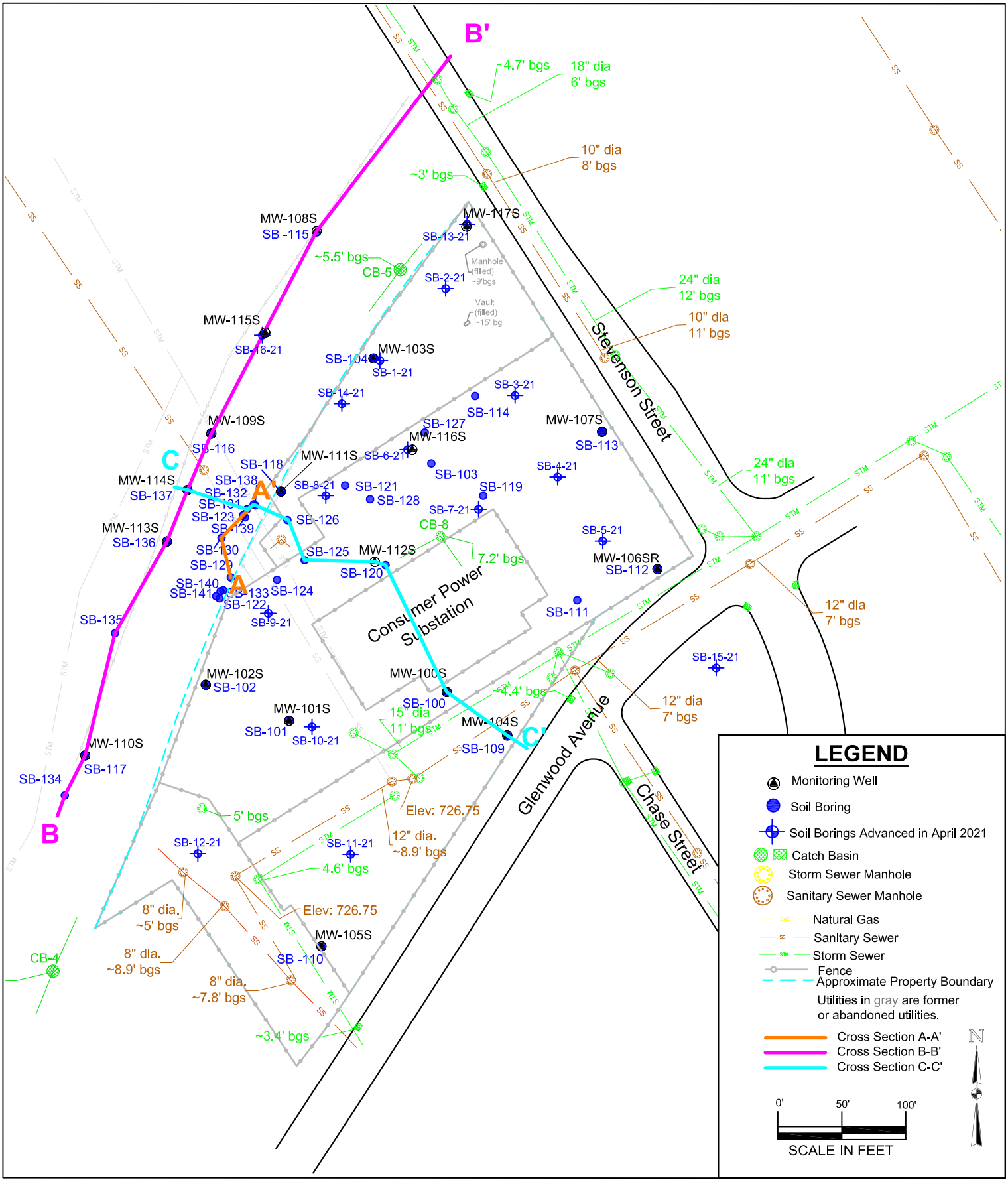
Phone: 810.715.2525; Fax: 810.715.2526

PFAS Groundwater Analytical Map

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DRAWING DATE:	CHECKED BY:
04/13/2022	MDS
PROJECT:	**FIGURE:**
11-4317-102	6

APPENDIX B: ATTACHMENTS



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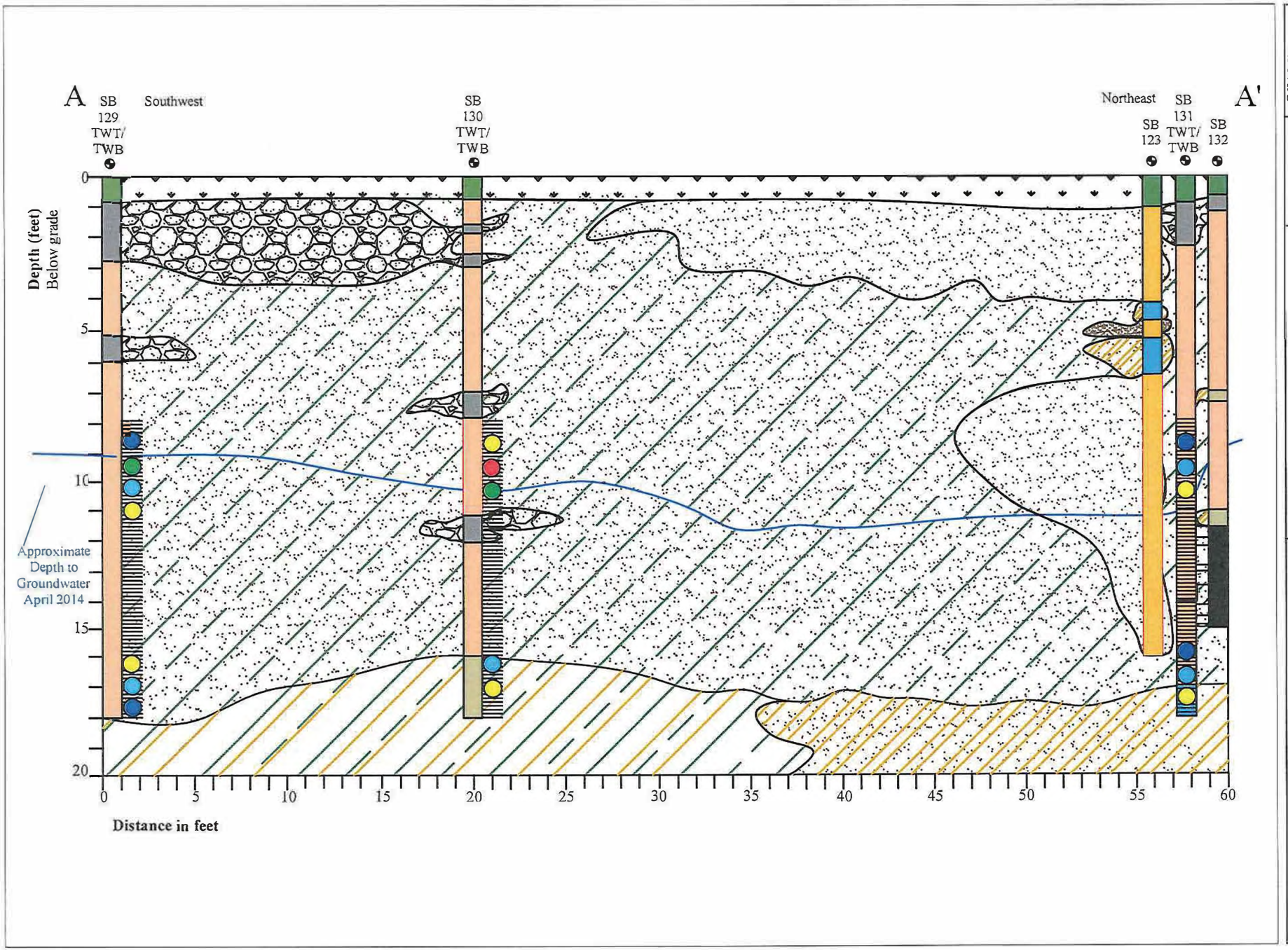
Cross Section Locations Map

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DATE:	CHECKED BY:
04/12/2022	MDS
PROJECT:	**FIGURE:**
11-4317-102	1A0



Cross Section Diagram A - A'
Dissolved Metals and TCE Exceedances in Groundwater
Racer Flint West - 12990
Flint West Industrial Land, Flint, MI

SCALE:	As Noted
DATE:	2015
PROJECT:	11-4317-102
Attachment:	1A1

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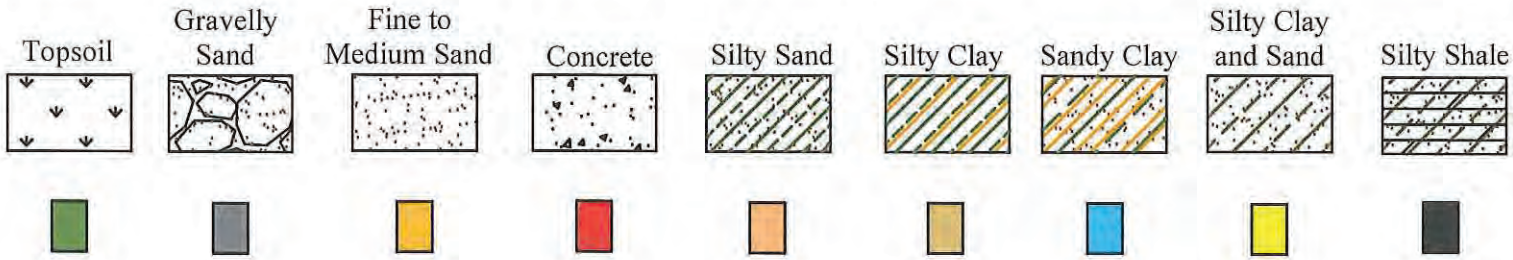
Cross Section Diagram Key



DW Residential Drinking Water Generic Cleanup Criteria

Monitoring Wells Installed by AE

GSI Groundwater Surface Water Interface Generic Cleanup Criteria GSI criteria calculation based on 257ppm total hardness in the Flint River

Soil and Groundwater analytical results are expressed as defined below;

Well Screen

Dissolved arsenic exceedance above DW and GSI GRCCs

Dissolved copper exceedance above GSI GRCCs

Dissolved lead exceedance above DW GRCCs

Dissolved chromium exceedance above DW GRCCs

Dissolved zinc exceedance above GSI GRCCs

Dissolved selenium exceedance above GSI GRCCs

TCE exceedance above DW GRCCs

TCE exceedance above DW and GSI GRCCs

Dissolved selenium exceedance above DW and GSI GRCCs

SCALE: None

Attachment: 1

DATE: 2016

PROJECT: 11-4317-102

Cross Section Diagram Key

Racer Flint West - 12990
Flint West Industrial Land, Flint, MI

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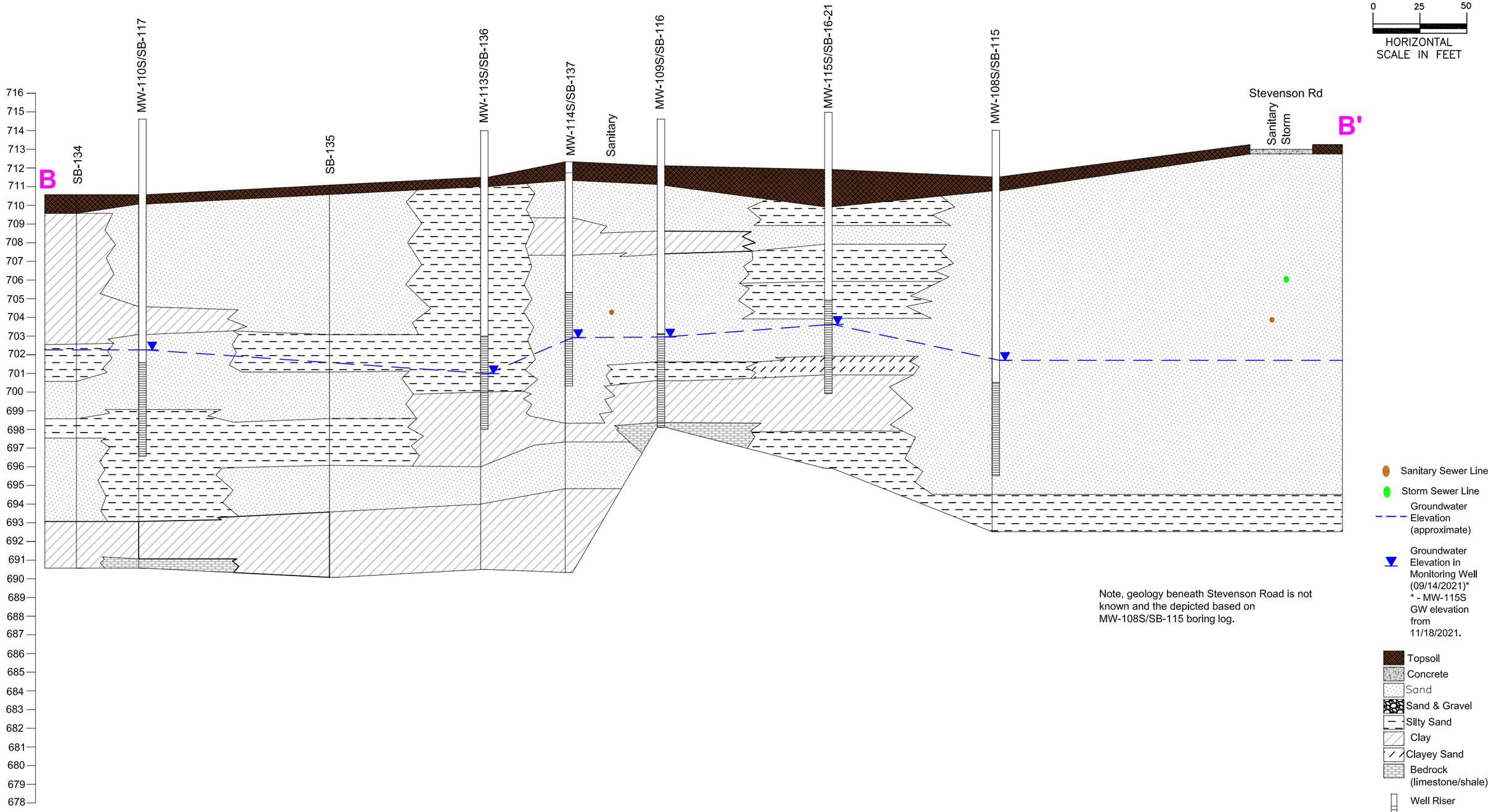

Note, geology beneath Stevenson Road is not known and the depicted based on MW-108S/SB-115 boring log.

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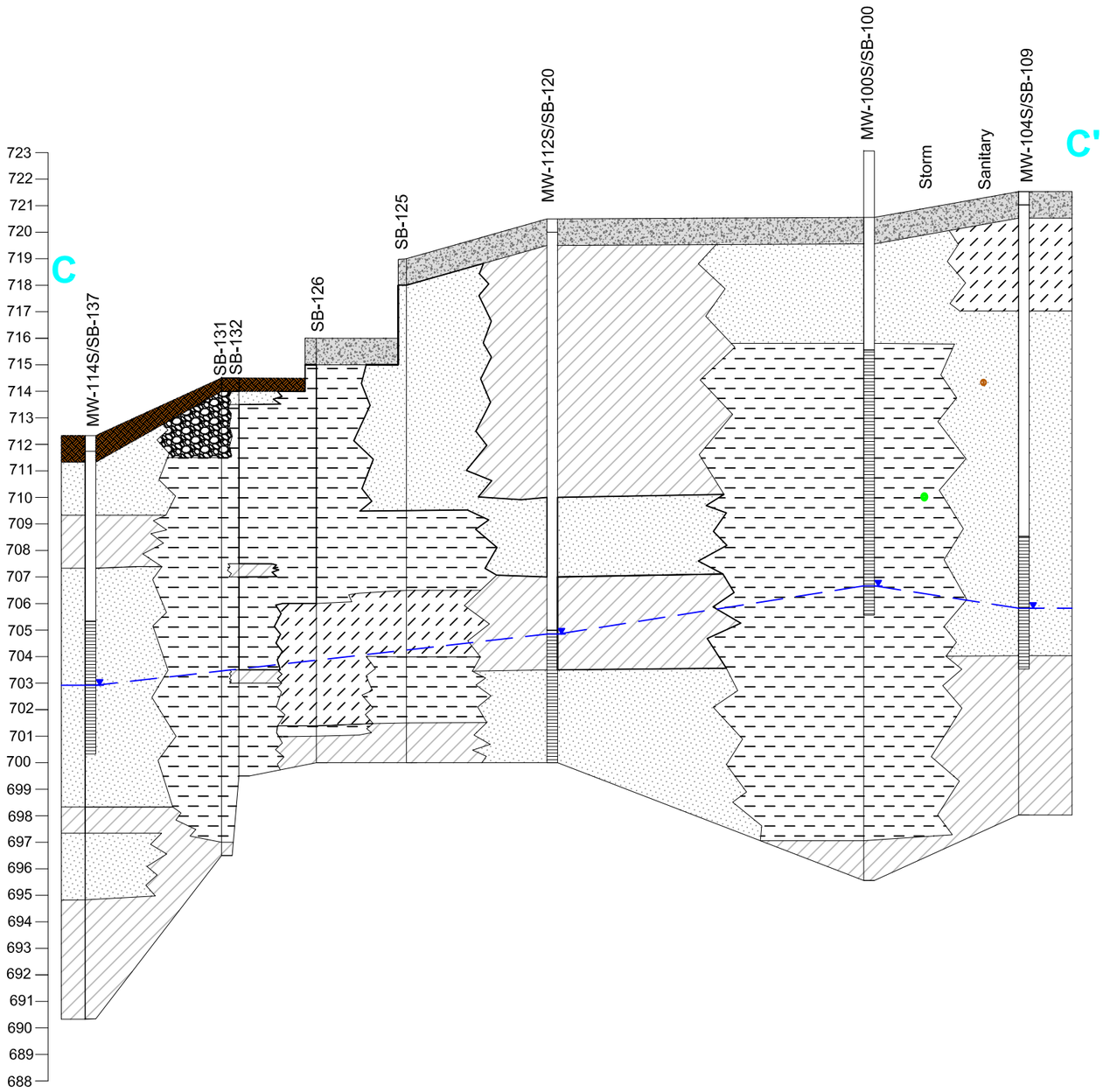
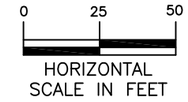
Cross Section B-B'

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DRAWING DATE:	CHECKED BY:
04/12/2022	MDS
PROJECT:	**FIGURE:**
11-4317-102	1A2





Sanitary Sewer Line

Storm Sewer Line

Groundwater Elevation (approximate)

Groundwater Elevation in Monitoring Well (09/14/2021)*
* - MW-115S GW elevation from 11/18/2021.

Topsoil

Concrete

Sand

Sand & Gravel

Silty Sand

Clay

Clayey Sand

Bedrock (limestone/shale)

Well Riser

Well Screen

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Cross Section C-C'

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DRAWING DATE:	CHECKED BY:
04/12/2022	MDS
PROJECT:	**FIGURE:**
11-4317-102	1A3

Table 1
GROUNDWATER ANALYTICAL DATA
RACER - Flint West #12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	SB124-TWT	SB125-TWT	SB127-TWT	SB129-TWT	SB130-TWT	SB131-TWT	SB124-TWB	SB125-TWB	SB127-TWB	SB129-TWB	SB130-TWB	SB131-TWB	Dup1	Dup2	Dup3
	Date Collected				4/3/14	4/3/14	3/29/14	4/3/14	4/3/14	4/3/14	4/3/14	3/29/14	3/29/14	3/29/14	3/29/14	4/3/14	3/29/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	3/29/14		
ANALYTE (ug/L)	**DW**	GSI																														
Arsenic (dissolved)	10	10					**11**			4				**21**		**19**				**17**	**57**	4	3	2	3	**30**	**38**						
Chromium (dissolved)	100	160	G			35		22	18					7	12		**128**	13			**147**	64	25	16			17	89	19	33	14		
Copper (dissolved)	1,000	20	G											28				21		5	22	140	28	42		12	24	94	144			
Lead (dissolved)	4	44	G											**24**				**29**		**5**	**23**	**208**	**16**	**47**	1	**19**	**11**	**31**	**14**			
Selenium (dissolved)	50	5							6	5		5						12				4		12				5	3			
Zinc (dissolved)	2,400	260	G		97		23	5		62	5	16	18	81	21	9	24	311	167	82	323	326	103	241	400	166	68	241	191	12		

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105SR	MW-106S	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	SB124-TWT	SB125-TWT	SB127-TWT	SB129-TWT	SB130-TWT	SB131-TWT	SB124-TWB	SB125-TWB	SB127-TWB	SB129-TWB	SB130-TWB	SB131-TWB	Dup1	Dup2	Dup3
	Date Collected																															
ANALYTE (ug/L)	**DW**	GSI																														
Acetone	730	1,700			1.13	2.36		0.88	1.82	3.58	3.82		1.22	2.11	0.72	5.17	0.93	5.7		9.1	5.7			10.3	66	25.8	5.9		5.8	1.06		
Methyl iodide	NC	NC																														
Carbon disulfide	800	NC																							0.86	0.4						
2 Butanone (MEK)	13,000	2,200			0.73	0.86		0.41	0.83	0.78	0.94					2.98								11.6	8.6						
Chloromethane	260	NC																						0.33		0.61						
Vinyl Chloride	2.0	13									0.64		**18**		**4**	**6**	0.45			**5**			2			2			2	**4**		
Chloroethane	430	1,100													0.6	1.13				1.07						0.77						
trichlorofluoromethane	2,600	NA																														
1,1-Dichloroethene	7.0	130											4		1	0.40				1						0.81				1		
Methylene Chloride	5.0	1,500																														
trans-1,2-Dichloroethene	100	1,500											0.92		0.24	0.23													0.28	0.26		
1,1-Dichloroethane	880	740									0.21		3.00		2	0.69	2.00						3.00						2.00	2.00		
cis-1,2-Dichloroethene	70	620									3		59		46	2	26			0.042	0.69	2	21			0.36	0.93	3.00	21.00	43.00		
Tetrahydrofuran	95	11,000																														
Chloroform	80	350						3.00				0.35	0.35		0.29								0.042						0.41	0.29		
1,1,1-Trichloroethane	200	89											0.48		0.75								0.72						0.71	0.73		
4-Methyl-2-pentanone (M	1800	1000000000														0.67				0.390					0.590	2.190						
2-Hexanone	1000	1000000000																		0.750				0.210	2.170	4.570						
Carbontetrachloride	5.0	45										2																				
Benzene	5.0	200									0.25									0.43	0.12			0.17	0.21	0.81	0.21	0.16	0.23			
Bromodichloromethane	80.0	NC						0.89																								
Trichloroethene	5.0	200			3	2					4		**102**		**92**	3	**23**				**8**	3	**81**	0.55			**8**	5	**78**	**86**		
Toluene	790	270								0.35	0.63							0.23		0.39	0.20			0.38	0.30	1.00	0.35	0.24	0.44			
Tetrachloroethene	5.0	60							**47**														0.180						0.17			
Chlorobenzene	100	25																														
Styrene	100	80																		0.43												
Ethylbenzene	74	18																						0.12	0.11	0.31			0.11			
Total Xylenes	280	41																								0.79						
1,2 -Dichlorobenzene	600	13																														
1,2,4-Trimethylbenzene	63	17																							0.22	0.31						
1,2,3-Trimethylbenzene	NC	NC								0.07	0.07														0.20	0.18						
Naphthalene	520	11																0.34		0.31				0.75	1.68	0.55						
2-Methylnaphthalene	260	19																0.51		0.40				0.47	0.88	0.47						

NOTES:

	Blank cells indicate no detectable concentrations
X	Exceeds DW criteria
X	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria
X	Compound also found in associated method blank, suggesting a laboratory artifact.
NC	Insufficient data to develop criterion/no criterion
G	Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River

G

Table 1
GROUNDWATER ANALYTICAL DATA
RACER - Flint West #12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Dup1	Dup2	Dup3
	Date Collected			6/25/14	6/25/14	6/25/14	6/26/14	6/25/14	6/26/14	6/25/14	6/25/14	6/26/14	6/26/14	6/26/14	6/26/14	6/25/14	6/26/14			
ANALYTE (ug/L)	**DW**	GSI																		
Arsenic (dissolved)	10	10														**19**				
Chromium (dissolved)	100	160	G			51											**152**			
Copper (dissolved)	1,000	20	G														4			
Lead (dissolved)	4	44	G					**25**	**22**	**23**				**15**			**5**			
Selenium (dissolved)	50	5				**66**			8			6								
Zinc (dissolved)	2,400	260	G	5	11		10				5	7				8	13			

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105SR	MW-106S	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Dup1	Dup2	Dup3
	Date Collected			6/25/14	6/25/14	6/25/14	6/26/14	6/25/14	6/26/14	6/25/14	6/25/14	6/26/14	6/26/14	6/26/14	6/26/14	6/25/14	6/26/14			
ANALYTE (ug/L)	**DW**	GSI																		
Acetone	730	1,700		1.74	1.45	2.04	2.67	1.55	1.86	1.59	2.82	1.32	1.47	1.29	1.48	4.93	1.32			
Methyl iodide	NC	NC																		
Carbon disulfide	800	NC														0.42	0.36			
2 Butanone (MEK)	13,000	2,200									0.4	0.65	0.29		0.29	1.99				
Chloromethane	260	NC		0.32				0.34									0.29			
Vinyl Chloride	2.0	13											**10**			**21**	2			
Chloroethane	430	1,100														2.9				
trichlorofluoromethane	2,600	NA																		
1,1-Dichloroethene	7.0	130											4			2.00	0.39			
Methylene Chloride	5.0	1,500																		
trans-1,2-Dichloroethene	100	1,500											0.7			0.64	0.24			
1,1-Dichloroethane	880	740														1.00	3.00			
cis-1,2-Dichloroethene	70	620		0.62									3			7	59			
Tetrahydrofuran	95	11,000											70.0							
Chloroform	80	350						5.00		0.22		0.5	0.37				0.320			
1,1,1-Trichloroethane	200	89											0.50				1.00			
4-Methyl-2-pentanone (MI	1800	1000000000														0.83				
2-Hexanone	1000	1000000000														1.46				
Carbontetrachloride	5.0	45										2								
Benzene	5.0	200																		
Bromodichloromethane	80.0	NC						0.82												
Trichloroethene	5.0	200		5	1	3			**26**		2		**104**		2	**24**	**69**			
Toluene	790	270																		
Tetrachloroethene	5.0	60																		
Chlorobenzene	100	25																		
Styrene	100	80																		
Ethylbenzene	74	18																		
Total Xylenes	280	41																		
1,2 -Dichlorobenzene	600	13																		
1,2,4-Trimethylbenzene	63	17																		
1,2,3-Trimethylbenzene	NC	NC																		
Naphthalene	520	11																		
2-Methylnaphthalene	260	19																		

NOTES:

	Blank cells indicate no detectable concentrations
X	Exceeds DW criteria
X	Exceeds GSI criteria G
X	Exceeds both DW and GSI criteria
X	Compound also found in associated method blank, suggesting a laboratory artifact.
NC	Insufficient data to develop criterion/no criterion
G	Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River

Table 1
GROUNDWATER ANALYTICAL DATA
RACER - Flint West #12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Dup1	Dup2
	Date Collected			12/22/14	12/22/14	11/18/14	12/22/14	11/18/14	11/18/14	11/18/14	11/18/14	11/20/14	11/20/14	11/18/14	11/20/14	11/18/14	11/20/14	11/18/14	11/20/14
ANALYTE (ug/L)	**DW**	**GSI**																	
Arsenic (dissolved)	10	10		**na**			**na**							**17**		**20**			
Arsenic	10	10		**29**	4	**12**	**na**	**12**	**42**	**13**	2	5	**16**	**55**	9	**400**	**40**	**11.00**	5.00
Cadmium (dissolved)	5	5	GX	**na**		**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Cadmium	5	5	GX	**6.90**		**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**
Chromium (dissolved)	100	160	G	**na**	**na**	7	**na**	9	6	15				7	7			10	
Chromium	100	160	GX	**na**	**na**	62	**na**	**17,800**	**42,600**	**68,000**	14	19	16	69	**237**	**140**	**822**	**14,000**	11
Copper (dissolved)	1,000	20	G	**na**			**na**												
Copper	1,000	20	GX	230	32	22	**na**	716	802	402	29	31	26	736	22	502	300	583	21
Lead (dissolved)	4	44	G	**na**			**na**												
Lead	4	44	GX	**70**	**21**	**14**	**na**	**6**	**29**	**44**	**6**	**15**	**32**	**249**	**20**	**354**	**289**	**5**	**23**
Selenium (dissolved)	50	5		**na**			**na**		14	5									
Selenium	50	5					**na**		16	5								6	
Zinc (dissolved)	2,400	260	G	**na**	66		**na**	28		15	9	13	11	25	34	9	23	36	43
Zinc	2,400	260	GX	493	74	33	**na**	29	52	210	27	222	47	556	36	920	504	23	75

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Dup1	Dup2
	Date Collected			12/22/14	12/22/14	11/18/14	12/22/14	11/18/14	11/18/14	11/18/14	11/18/14	11/20/14	11/20/14	11/18/14	11/20/14	11/18/14	11/20/14		
ANALYTE (ug/L)	**DW**	**GSI**																	
Acetone	730	1,700		1.83	2.77		**na**									42			
Methyl iodide	NC	NC					na												
Carbon disulfide	800	NC		0.29			**na**	0.70											
2 Butanone (MEK)	13,000	2,200		0.55			**na**									24			
Chloromethane	260	NC					**na**	0.27	0.35		0.33		0.53	0.58	0.88		0.48	0.58	
Vinyl Chloride	2.0	13					**na**				0.58		**12**			**3**			
Chloroethane	430	1,100					**na**									0.88			
trichlorofluoromethane	2,600	NA					**na**												
1,1-Dichloroethene	7.0	130					**na**						5						
Methylene Chloride	5.0	1,500					**na**												
trans-1,2-Dichloroethene	100	1,500					**na**						0.9						
1,1-Dichloroethane	880	740					**na**				0.71		1			0.76	0.47		
cis-1,2-Dichloroethene	70	620		1			**na**				2	0.57	45		1	3	9		0.56
Tetrahydrofuran	95	11,000					**na**												
Chloroform	80	350					**na**	3				2	0.18					3	2
1,1,1-Trichloroethane	200	89					**na**						0.37				0.29		
4-Methyl-2-pentanone (MIBK)	1800	1000000000					**na**									3.88			
2-Hexanone	1000	1000000000					**na**									12			
Carbontetrachloride	5.0	45					**na**					2							2
Benzene	5.0	200					**na**							0.12		0.29			
Bromodichloromethane	80.0	NC					**na**	0.54										0.46	
Trichloroethene	5.0	200		2	4	0.36	**na**				5		**160**		**7**		**61**	0.3	
Toluene	790	270					**na**							0.22		0.51			
Tetrachloroethene	5.0	60			0.23		**na**		**73**				0.2				0.20		
Chlorobenzene	100	25					**na**												
Styrene	100	80					**na**												
Ethylbenzene	74	18					**na**									0.17			
Total Xylenes	280	41					**na**												
1,2 -Dichlorobenzene	600	13					**na**												
1,2,4-Trimethylbenzene	63	17					**na**												
1,2,3-Trimethylbenzene	NC	NC					na												
Naphthalene	520	11					**na**												
2-Methylnaphthalene	260	19					**na**												

NOTES:

	Blank cells indicate no detectable concentrations
X	Exceeds DW criteria
X	Exceeds GSI criteria G =
X	Exceeds both DW and GSI criteria
X	Compound also found in associated method blank, suggesting a laboratory artifact.
NC	Insufficient data to develop criterion/no criterion
G	Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River
na	Sample not analyzed for this constituent

Table 1
GROUNDWATER ANALYTICAL DATA
RACER - Flint West #12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Dup1	Dup2
	Date Collected			DRY	4/28/15	4/28/15	4/30/15	4/28/15	4/28/15	4/28/15	4/28/15	4/30/15	4/30/15	4/30/15	4/30/15	4/28/15	4/30/15	4/28/15	4/30/15
ANALYTE (ug/L)	**DW**	GSI																	
Arsenic (dissolved)	10	10					6									**16**			6
Arsenic	10	10			4		**23**			5				2	6	**277**	6		**20**
Chromium (dissolved)	100	160	G			22		5	8									10	
Chromium	100	160	G		17	24		**1590**	**829**	**58300**					29	9	73	16	
Copper (dissolved)	1000	20	G																
Copper	1000	20	G		31	9		40	13	306						14	12		
Lead (dissolved)	4	44	G																
Lead	4	44	G		**24**					**26**						**9**	**11**		
Selenium (dissolved)	50	5							9										
Selenium	50	5							9										
Zinc (dissolved)	2400	260	G		9			8		120		6			9	39	22	11	
Zinc	2400	260	G		9			8		133		6			9	39	22	11	
Final Field Turbidity Reading, before flitering stated in ug/L					785E+3	432E+3	595E+3	1010E+3	1105E+3	1694E+3	479E+3	453E+3	505E+3	585E+3	617E+3	829E+3	729E+3		
	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105SR	MW-106S	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Dup1	Dup2
	Date Collected			DRY	4/28/15	4/28/15	4/30/15	4/28/15	4/28/15	4/28/15	4/28/15	4/30/15	4/30/15	4/30/15	4/30/15	4/28/15	4/30/15	4/28/15	4/30/15
ANALYTE (ug/L)	**DW**	GSI																	
PNAs	varies	varies																	

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105SR	MW-106S	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Dup1	Dup2
	Date Collected			DRY	4/28/15	4/28/15	4/30/15	4/28/15	4/28/15	4/28/15	4/28/15	4/30/15	4/30/15	4/30/15	4/30/15	4/28/15	4/30/15	4/28/15	4/30/15
ANALYTE (ug/L)	**DW**	GSI																	
Acetone	730	1,700														10			
Methyl iodide	NC	NC																	
Carbon disulfide	800	NC								0.17						0.16			
2 Butanone (MEK)	13,000	2,200														6.6			
Chloromethane	260	NC			4	6	2	6	5	5	4	4	4	5	5	4	2		3
Vinyl Chloride	2.0	13									0.6		**21**		**4**	**4**	2		
Chloroethane	430	1,100					0.7									5			0.77
trichlorofluoromethane	2,600	NA																	
1,1-Dichloroethene	7.0	130											4		0.88				
Methylene Chloride	5.0	1,500																	
trans-1,2-Dichloroethene	100	1,500											1		0.99		0.26		
1,1-Dichloroethane	880	740									0.56		2		2	0.52	3		
cis-1,2-Dichloroethene	70	620									2		51		48	0.66	19		
Tetrahydrofuran	95	11,000																	
Chloroform	80	350						1		0.7		1	0.28		0.29	0.21	0.19		
1,1,1-Trichloroethane	200	89											0.51		0.36				
4-Methyl-2-pentanone (MIBK	1800	1E+09														1			
2-Hexanone	1000	1E+09														3			
Carbontetrachloride	5.0	45										2							
Benzene	5.0	200			0.26		0.23												0.25
Bromodichloromethane	80.0	NC																	
Trichloroethene	5.0	200			2	0.51					2		**138**		**78**	0.62	**36**		
Toluene	790	270			0.71					0.18									
Tetrachloroethene	5.0	60							**69**										
Chlorobenzene	100	25																	0.17
Styrene	100	80					0.15												0.21
Ethylbenzene	?	?																	
Total Xylenes	280	41																	
1,2 -Dichlorobenzene	?	?																	
1,2,4-Trimethylbenzene	63	17																	
1,2,3-Trimethylbenzene	NC	NC																	
Naphthalene	520	11																	
2-Methylnaphthalene	260	19																	

NOTES:

	Blank cells indicate no detectable concentrations
X	Exceeds DW criteria
X	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria
X	Compound also found in associated method blank, suggesting a laboratory artifact.
NC	Insufficient data to develop criterion/no criterion
G	Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River

Table 1
GROUNDWATER ANALYTICAL DATA
RACER - Flint West #12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Trip Blank	Field Blank
	Date Collected			DRY	10/26/15	10/26/15	10/27/15	10/26/15	10/26/15	10/26/15	10/26/15	10/27/15	10/27/15	10/27/15	10/27/15	10/26/15	10/27/15	10/26/15	10/26/15
ANALYTE (ug/L)	**DW**	GSI																	
Arsenic (dissolved)	10	10		DRY			4							3.31	0.51	4	1.09		
Arsenic	10	10		DRY	4.3	**20**	**140**	**13.6**	**70**	**53**	**68**	**18.4**	**40**	**30**	**60**	**235**	**30**		
Chromium (dissolved)	100	160	G	DRY	2.39	7.1	0.51		23	**128**		0.67	0.5	0.66	4.35	0.57	0.76		
Chromium	100	160	G	DRY	49.1	90	**120**	**10,000**	16.2	**446,000**	29.5	70	70	16.4	**1,140**	**150**	**220**		
Copper (dissolved)	1000	20	G	DRY				1.04	1.89	1.5	4.88	2.28	7.11	12	2.85	115	3.13		
Copper	1000	20	G	DRY	14.42	37.44	160	210	820	**2,760**	70	90	90	90	70	200	80		
Lead (dissolved)	4	44	G	DRY				1.57		1.11						1.27			
Lead	4	44	G	DRY	**7.61**	**20.45**	**80**	**29.78**	**180**	**300**	**16.86**	**90**	**70**	**20.3**	**40**	**100**	**50**		
Selenium (dissolved)	50	5		DRY		1.3		1.9	9.9	4.6	2.2	1.4	2	***1.2***		**102**			
Selenium	50	5		DRY	12	16		15	17						***16***				
Zinc (dissolved)	2400	260	G	DRY	35	111	12	42	24	22	17	16	15	19	34	101	84		
Zinc	2400	260	G	DRY	40.3	100	410	160	800	1,600	110	350	230	70	140	450	170		
	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Trip Blank	Field Blank
	Date Collected			DRY	10/26/15	10/26/15	10/27/15	10/26/15	10/26/15	10/26/15	10/26/15	10/27/15	10/27/15	10/27/15	10/27/15	10/26/15	10/27/15	10/26/15	10/26/15
ANALYTE (ug/L)	**DW**	GSI																	
Acetone	730	1,700		DRY															
Methyl iodide	NC	NC		DRY															
Carbon disulfide	800	NC		DRY															
2 Butanone (MEK)	13,000	2,200		DRY			1.74											0.82	0.79
Chloromethane	260	NC		DRY															
Vinyl Chloride	2.0	13		DRY									**20**		**97**				
Chloroethane	430	1,100		DRY															
trichlorofluoromethane	2,600	NA		DRY															
1,1-Dichloroethene	7.0	130		DRY									5.3		4	0.76			
Methylene Chloride	5.0	1,500		DRY															
trans-1,2-Dichloroethene	100	1,500		DRY											1		0.27		
1,1-Dichloroethane	880	740		DRY									3.3		2		1		
cis-1,2-Dichloroethene	70	620		DRY							0.42	0.66	**80**		42	1	23		
Tetrahydrofuran	95	11,000		DRY															
Chloroform	80	350		DRY				2				3							
1,1,1-Trichloroethane	200	89		DRY											0.33		0.45		
4-Methyl-2-pentanone (MIBK)	1800	1000000000		DRY												1.09			
2-Hexanone	1000	1000000000		DRY												1.64			
Carbontetrachloride	5.0	45		DRY								3							
Benzene	5.0	200		DRY			0.21		0.26	0.22						0.2			
Bromodichloromethane	80.0	NC		DRY				0.65											
Trichloroethene	5.0	200		DRY	3	0.68		0.68			2	0.33	**200**		**92**		**67**		
Toluene	790	270		DRY					0.58	0.4	0.31					0.37			
Tetrachloroethene	5.0	60		DRY					**58**										
Chlorobenzene	100	25		DRY															
Styrene	100	80		DRY															
Ethylbenzene	74	18		DRY															
Total Xylenes	280	41		DRY															
1,2 -Dichlorobenzene	600	13		DRY															
1,2,4-Trimethylbenzene	63	17		DRY															
1,2,3-Trimethylbenzene	NC	NC		DRY															
Naphthalene	520	11		DRY															
2-Methylnaphthalene	260	19		DRY															

NOTES:

	Blank cells indicate no detectable concentrations
X	Exceeds DW criteria
X	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria
X	Compound also found in associated method blank, suggesting a laboratory artifact.
NC	Insufficient data to develop criterion/no criterion
G	Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River

Table 1

GROUNDWATER ANALYTICAL DATA

RACER - Flint West #12990

As Erronously Labeled in May 23, 2016 Laboratory Report

														MW-112	**MW-113**						**MW-120**										
	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Trip Blank	Field Blank	Trip Blank	Field Blank	Dup1	Trip Blank	Field Blank	Dup2	Dup3
	Date Collected			5/11/16	5/11/16	NS	6/8/16	6/1/16	NS	5/11/16	5/11/16	6/1/16	6/1/16	6/1/16	6/8/16	5/11/16	6/1/16	5/11/16	5/11/16	6/1/16	6/1/16	6/1/16	6/8/16	6/8/16	6/8/16	6/8/16
ANALYTE (ug/L)	**DW**	GSI																													
Arsenic (dissolved)	10	10				**NS**	6	1.65	**NS**				0.65	1.21	0.55	**18**	2.08										
Arsenic	10	10			3	**NS**	**22**	1.62	**NS**	3		0.96	5	3	1	**79**	9										
Chromium (dissolved)	100	160	G			**NS**	1.16	1.19	**NS**			1.42	1.17	1.77	3.33		1.73										
Chromium (total)	100	160	G	5	13	**NS**	1	**465**	**NS**	77	3	1.91	3.38	1.3	4		4.86										
Chromium VI (dissolved)	100	160				**NS**			**NS**																		
Chromium VI (total)	100	160		**NA**	**NA**	**NS**	**NA**		**NS**	**NA**				**NA**		**NA**	**NA**										
Copper (dissolved)	1000	20	G			**NS**	2.02	0.51	**NS**			2.32	6	1.49	1.25		0.73										
Copper	1000	20	G	4	7	**NS**	0.77	16	**NS**	7	3	1.95	8	0.74	1.38												
Lead (dissolved)	4	44	G			**NS**	0.278	0.764	**NS**			0.187	0.325	0.32	0.094	1	0.155										
Lead	4	44	G	2	3	**NS**	0.105	0.554	**NS**	2		0.785	2.6		0.5												
Selenium (dissolved)	50	5				**NS**			**NS**			6															
Selenium	50	5				**NS**		6	**NS**			6															
Zinc (dissolved)	2400	260	G	21		**NS**	1870	18	**NS**			1220	730	373	49	5	317										
Zinc	2400	260	G	11	22	**NS**	2.46	1.48	**NS**	12	7	6	10		2.95	7											

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Trip Blank	Field Blank	Trip Blank	Field Blank	Dup2	Trip Blank	Field Blank	Dup3	Dup3
	Date Collected			5/11/16	5/11/16	NS	6/8/16	6/1/16	NS	5/11/16	5/11/16	6/1/16	6/1/16	6/1/16	6/8/16	5/11/16	6/1/16	5/11/16	5/11/16	6/1/16	6/1/16	6/1/16	6/8/16	6/8/16	6/8/16	6/8/16
ANALYTE (ug/L)	**DW**	GSI																													
Acetone	730	1,700		2.72	1.62	**NS**			**NS**	2.72	2.1		0.6	0.67		4.21			1.98		0.69						
Methyl iodide	NC	NC				**NS**			**NS**																		
Carbon disulfide	800	NC				**NS**			**NS**																		
2 Butanone (MEK)	13,000	2,200				**NS**			**NS**							1.36			0.37								
Chloromethane	260	NC				**NS**			**NS**																		
Vinyl Chloride	2.0	13				**NS**			**NS**				**15**			**17**											
Chloroethane	430	1,100				**NS**			**NS**							2.59											
trichlorofluoromethane	2,600	NA				**NS**			**NS**																		
1,1-Dichloroethene	7.0	130				**NS**			**NS**				3														
Methylene Chloride	5.0	1,500				**NS**			**NS**																		
trans-1,2-Dichloroethene	100	1,500				**NS**			**NS**				0.59			0.36											
1,1-Dichloroethane	880	740				**NS**			**NS**				1			1	3										
cis-1,2-Dichloroethene	70	620		0.34		**NS**			**NS**							3	30										
Tetrahydrofuran	95	11,000				**NS**			**NS**																		
Chloroform	80	350				**NS**		3	**NS**			1									0.490	3.000					
1,1,1-Trichloroethane	200	89				**NS**			**NS**				0.31				0.3										
4-Methyl-2-pentanone (MIBK)	1800	ID				**NS**			**NS**							0.3											
2-Hexanone	1000	ID				**NS**			**NS**							0.47											
Carbontetrachloride	5.0	45				**NS**			**NS**			2															
Benzene	5.0	200				**NS**			**NS**																		
Bromodichloromethane	80.0	NC				**NS**		0.74	**NS**													0.710					
Trichloroethene	5.0	200		4	2	**NS**			**NS**	4	0.26		**93**		**11**	**12**	**50**										
Toluene	790	270				**NS**			**NS**																		
Tetrachloroethene	5.0	60				**NS**			**NS**																		
Chlorobenzene	100	25				**NS**			**NS**																		
Styrene	100	80				**NS**			**NS**																		
Ethylbenzene	74	18				**NS**			**NS**																		
Total Xylenes	280	41				**NS**			**NS**																		
1,2 -Dichlorobenzene	600	13				**NS**			**NS**																		
1,2,4-Trimethylbenzene	63	17				**NS**			**NS**																		
1,2,3-Trimethylbenzene	NC	NC				**NS**			**NS**																		
Naphthalene	520	11				**NS**			**NS**																		
2-Methylnaphthalene	260	19				**NS**			**NS**																		
Diethyl ether	10 (E)	ID				**NS**			**NS**																		
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)				**NS**			**NS**																		
Acrylonitrile	2.6	2.0 (M); 1.2				**NS**			**NS**																		
Dichlorodifluoromethane	1,700	ID				**NS**			**NS**																		
Bromomethane	10	35				**NS**			**NS**																		
1,2-Dichloroethane	5.0 (A)	360 (X)				**NS**			**NS**																		
Trichloroethene	5.0 (A)	200 (X)				**NS**			**NS**																		
1,2-Dichloropropane	5.0 (A)	230 (X)				**NS**			**NS**																		
cis-1,3-Dichloropropene	NC	NC				**NS**			**NS**																		
trans-1,3-Dichloropropene	NC	NC				**NS**			**NS**																		
1,1,2-Trichloroethane	5.0 (A)	330 (X)				**NS**			**NS**																		
trans-1,4-Dichloro-2-butene	NC	NC				**NS**			**NS**																		
Dibromochloromethane	80 (A,W)	ID				**NS**			**NS**																		
1,2-Dibromoethane	NC	NC				**NS**			**NS**																		
1,1,1,2-Tetrachloroethane	77	ID				**NS**			**NS**																		
Isopropylbenzene	800	28				**NS**			**NS**																		
Bromoform	80 (A,W)	ID				**NS**			**NS**																		
1,1,2,2-Tetrachloroethane	8.5	78 (X)				**NS**			**NS**																		
1,2,3-Trichloropropane	42	NA				**NS**			**NS**																		
n-Propylbenzene	80	ID				**NS**			**NS**																		
Bromobenzene	18	NA				**NS**			**NS**																		
1,3,5-Trimethylbenzene	72 (E)	45				**NS**			**NS**																		
tert-Butylbenzene	80	ID				**NS**			**NS**																		
1,2,4-Trimethylbenzene	63 (E)	17				**NS**			**NS**																		
1,2,3-Trichlorobenzene	NC	NC				**NS**			**NS**																		

NOTES:

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X	Exceeds DW criteria
X	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria
X	Compound also found in associated method blank, suggesting a laboratory artifact.
NC	Insufficient data to develop criterion/no criterion
G	Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S			Dup			Dup			
	Date Collected			10/27/16	10/27/16	11/1/16	10/31/16	11/1/16	11/1/16	10/27/16	10/27/16	10/31/16	10/31/16	10/31/16	10/31/16	10/27/16	10/31/16			10/27/16			10/31/16			
ANALYTE (ug/L)	DW	GSI																								
Arsenic (dissolved)	10	10				1.63			1.23		0.79	15			6	108	4			34						
Arsenic	10	10		1.69	0.7	4			6	0.93	1.05	52	1.26		11	265	17			259			2			
Chromium (dissolved)	100	160	G	0.95	20	6		24	407	340	0.18	0.56			0.41	2.41	2.86			0.59			0.64			
Chromium (total)	100	160	G	10	63	8	0.059	146	6540	619	19	1.31	0.62	6	2	9	22			6			1.38			
Chromium VI (dissolved)	100	160												14												
Chromium VI (total)	100	160																								
Copper (dissolved)	1000	20	G	0.91	4.31	2.20	0.99	2.22	31	32	1.25		6		6	6				3			0.86			
Copper	1000	20	G	5	18	1.41	1.1	4.16	203	64	2.46		6	1.85	6	10	2.94			6			1.63			
Lead (dissolved)	4	44	G	0.144	0.148	0.97	0.116		0.85	0.451			0.151	0.075	0.978	1.651				0.191			0.361			
Lead	4	44	G	2.32	0.895	1.33	0.306		3.00	0.632	0.35	0.161	0.479	0.523	1.3	5	2.855			3.000			0.928			
Selenium (dissolved)	50	5																								
Selenium	50	5																								
Zinc (dissolved)	2400	260	G	20.6	2.28	5	4.19		390	2.89	10	2.36	3.46		8	16	2.05			10			6			
Zinc	2400	260	G	12	5	6	2.35		1380	2	11		3.59	2.3	7	32	9			21			6			

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Trip Blank	Field Blank	Dup	Trip Blank	Field Blank	Dup			
	Date Collected			10/27/16	10/27/16	11/1/16	10/31/16	11/1/16	11/1/16	10/27/16	10/27/16	10/31/16	10/31/16	10/31/16	10/31/16	10/27/16	10/31/16	10/27/16	10/27/16	10/27/16	10/31/16	10/31/16	10/31/16			
ANALYTE (ug/L)	DW	GSI																								
Acetone	730	1,700														10										
Methyl Iodide	NC	NC																								
Carbon disulfide	800	NC																								
2 Butanone (MEK)	13,000	2,200																								
Chloromethano	260	NC																								
Vinyl Chloride	2.0	13											8		72	2				2						
Chloroethane	430	1,100														3				3						
Irichlorofluoromethane	2,600	NA																								
1,1-Dichloroethene	7.0	130											3		4											
Methylene Chloride	5.0	1,500																								
trans-1,2-Dichloroetheno	100	1,500																								
1,1-Dichloroethane	880	740											2		2											
cis-1,2-Dichloroethene	70	620									2		32		10	2	11			2						
Tetrahydrofuran	95	11,000																								
Chloroform	80	350						1				3											2			
1,1,1-Trichloroethane	200	89																								
4-Methyl-2-pentanono (MIBK)	1800	ID																								
2-Hexanone	1000	ID																								
Carbontetrachloride	5.0	45										2											1			
Benzene	5.0	200																								
Bromodichloromethane	80.0	NC																								
Trichloroethene	5.0	200		3	2						3		119		41	3	50			2						
Toluene	790	270																								
Tetrachloroethene	5.0	60							34																	
Chlorobenzene	100	25																								
Styrene	100	80																								
Ethylbenzene	74	18																								
Total Xylenes	280	41																								
1,2 -Dichlorobenzene	600	13																								
1,2,4-Trimethylbenzene	63	17																								
1,2,3-Trimethylbenzene	NC	NC																								
Naphthalene	520	11																								
2-Methylnaphthalene	260	19																								
Diethyl ether	10 (E)	ID																								
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)																								
Acrylonitrile	2.6	2.0 (M); 1.2																								
Dichlorodifluoromethane	1,700	ID																								
Bromomethane	10	35																								
1,2-Dichloroethane	5.0 (A)	360 (X)																								
Trichloroethene	5.0 (A)	200 (X)																								
1,2-Dichloropropane	5.0 (A)	230 (X)																								
cis-1,3-Dichloropropene	NC	NC																								
trans-1,3-Dichloropropene	NC	NC																								
1,1,2-Trichloroethano	5.0 (A)	330 (X)																								
trans-1,4-Dichloro-2-butene	NC	NC																								
Dibromochloromethane	80 (A,W)	ID																								
1,2-Dibromoethano	NC	NC																								
1,1,1,2-Tetrachloroethane	77	ID																								
Isopropylbenzene	800	28																								
Bromoform	80 (A,W)	ID																								
1,1,2,2-Tetrachloroethane	8.5	78 (X)																								
1,2,3-Trichloropropane	42	NA																								
n-Propylbenzene	80	ID																								
Bromobenzene	18	NA																								
1,3,5-Trimethylbenzene	72 (E)	45																								
tert-Butylbenzene	80	ID																								
1,2,4-Trimethylbenzene	63 (E)	17																								
1,2,3-Trichlorobenzeno	NC	NC																								

NOTES:

	Blank cells indicate no detectable concentrations
X	Exceeds DW criteria
X	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria
NC	Insufficient data to develop criterion/no criterion
G	Groundwator to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River
NS	No Sample
1	Filtered in lab
2	Filtered and preserved in lab
NA	Not analyzed due to turbidity

Derected Concentrations for compounds also found in the method blank that appear to be laboratory artifacts are not provided.

Table 1

GROUNDWATER ANALYTICAL DATA

RACER - Flint West #12990

As Erronously Labeled in May 23, 2016 Laboratory Report

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Trip Blank	Field Blank	Trip Blank	Field Blank	Dup1	Trip Blank	Field Blank	Dup2	Dup3
	Date Collected			NS	6/13/17	6/13/17	6/13/17	6/13/17	6/13/17	6/13/17	6/13/17	NS	NS	NS	6/13/17	6/13/17	NS	6/13/17	6/13/17			6/13/17				
ANALYTE (ug/L)	**DW**	GSI																								
Arsenic (dissolved)	10	10			0.85		9.00	0.41	0.64	0.58		NS	NS	NS	1.37	**82.00**	NS					**84.000**				
Arsenic	10	10			0.63	3.00	**13.00**	0.53	0.56	1.11	0.44	NS	NS	NS	1.45	**126.00**	NS					**123.000**				
Chromium (dissolved)	100	160	G		1.57	12.00	0.22	28.00	37.00	100.00	0.16	NS	NS	NS	2.69	0.34	NS					0.62				
Chromium (total)	100	160	G		21	72.00	1.50	**1640.00**	**776.00**	**2500.00**		NS	NS	NS	7.00	0.37	NS					0.7				
Chromium VI (dissolved)	100	160				8.00	0.86					NS	NS	NS			NS									
Chromium VI (total)	100	160				6.00						NS	NS	NS			NS									
Copper (dissolved)	1000	20	G		0.59	1.56	0.86	6.00	2.38	4.31	1.61	NS	NS	NS	1.34		NS					0.4				
Copper	1000	20	G		2.47	8.00	1.81	33.00	8.00	28.00	1.60	NS	NS	NS	1.38		NS					0.62				
Lead (dissolved)	4	44	G			0.15	0.09		0.06	0.18	0.13	NS	NS	NS	0.21	0.06	NS									
Lead	4	44	G		0.547	2.82	0.53	0.14	0.22	0.76	0.14	NS	NS	NS	0.96	0.08	NS					0.066				
Selenium (dissolved)	50	5										NS	NS	NS			NS									
Selenium	50	5										NS	NS	NS			NS									
Zinc (dissolved)	2400	260	G		1.69	2.09	2.48	3.13	5.00	2.20	4.41	NS	NS	NS	1.72	2.22	NS					2.25				
Zinc	2400	260	G		3.16	9.00	3.22	2.59	13.00	4.68	3.01	NS	NS	NS	2.54	4.07	NS					5				

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Trip Blank	Field Blank	Trip Blank	Field Blank	Dup1	Trip Blank	Field Blank	Dup3	Dup3
	Date Collected			6/13/17	6/13/17	6/13/17	6/13/17	6/13/17	6/13/17	6/13/17	6/13/17	NS	NS	NS	6/13/17	6/13/17	NS	6/13/17	6/13/17			6/13/17				
ANALYTE (ug/L)	**DW**	GSI																								
Acetone	730	1,700		NS	4.29	2.15	3.86	2.50	4.15	2.26	2.40	NS	NS	NS	4.31	5.87	NS	3.04	5.67			4.61				
Methyl iodide	NC	NC		NS								NS	NS	NS			NS									
Carbon disulfide	800	NC		NS								NS	NS	NS			NS									
2 Butanone (MEK)	13,000	2,200		NS	0.89							NS	NS	NS	0.80	2.00	NS		0.9			1.37				
Chloromethane	260	NC		NS								NS	NS	NS			NS									
Vinyl Chloride	2.0	13		NS								NS	NS	NS		**10.00**	NS					**12**				
Chloroethane	430	1,100		NS								NS	NS	NS		1.59	NS					2.05				
trichlorofluoromethane	2,600	NA		NS	0.56							NS	NS	NS			NS									
1,1-Dichloroethene	7.0	130		NS								NS	NS	NS		1.00	NS					2				
Methylene Chloride	5.0	1,500		NS								NS	NS	NS		0.35	NS		0.31			0.41				
trans-1,2-Dichloroethene	100	1,500		NS								NS	NS	NS		0.39	NS					0.53				
1,1-Dichloroethane	880	740		NS								NS	NS	NS		1.00	NS					1				
cis-1,2-Dichloroethene	70	620		NS								NS	NS	NS		4.00	NS					6				
Tetrahydrofuran	95	11,000		NS								NS	NS	NS			NS									
Chloroform	80	350		NS				1.00				NS	NS	NS			NS		11.000							
1,1,1-Trichloroethane	200	89		NS								NS	NS	NS			NS									
4-Methyl-2-pentanone (MIBK)	1800	ID		NS							0.15	NS	NS	NS		0.75	NS									
2-Hexanone	1000	ID		NS								NS	NS	NS		0.97	NS									
Carbontetrachloride	5.0	45		NS								NS	NS	NS			NS									
Benzene	5.0	200		NS								NS	NS	NS		0.20	NS									
Bromodichloromethane	80.0	NC		NS				0.55				NS	NS	NS			NS		2.00							
Trichloroethene	5.0	200		NS	0.97	0.74					0.25	NS	NS	NS	3.00	**10.00**	NS					**15**				
Toluene	790	270		NS								NS	NS	NS			NS									
Tetrachloroethene	5.0	60		NS					**29.00**			NS	NS	NS			NS									
Chlorobenzene	100	25		NS								NS	NS	NS			NS									
Styrene	100	80		NS								NS	NS	NS			NS									
Ethylbenzene	74	18		NS								NS	NS	NS			NS									
Total Xylenes	280	41		NS								NS	NS	NS			NS									
1,2 -Dichlorobenzene	600	13		NS								NS	NS	NS			NS									
1,2,4-Trimethylbenzene	63	17		NS								NS	NS	NS			NS									
1,2,3-Trimethylbenzene	NC	NC		NS								NS	NS	NS			NS									
Naphthalene	520	11		NS								NS	NS	NS			NS									
2-Methylnaphthalene	260	19		NS								NS	NS	NS	**1.40**		NS									
Diethyl ether	10 (E)	ID		NS								NS	NS	NS			NS									
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)		NS								NS	NS	NS			NS									
Acrylonitrile	2.6	2.0 (M); 1.2		NS								NS	NS	NS			NS									
Dichlorodifluoromethane	1,700	ID		NS								NS	NS	NS			NS		0.32							
Bromomethane	10	35		NS								NS	NS	NS			NS									
1,2-Dichloroethane	5.0 (A)	360 (X)		NS								NS	NS	NS			NS									
Trichloroethene	5.0 (A)	200 (X)		NS								NS	NS	NS			NS									
1,2-Dichloropropane	5.0 (A)	230 (X)		NS								NS	NS	NS			NS									
cis-1,3-Dichloropropene	NC	NC		NS								NS	NS	NS			NS									
trans-1,3-Dichloropropene	NC	NC		NS								NS	NS	NS			NS									
1,1,2-Trichloroethane	5.0 (A)	330 (X)		NS								NS	NS	NS			NS									
trans-1,4-Dichloro-2-butene	NC	NC		NS								NS	NS	NS			NS									
Dibromochloromethane	80 (A,W)	ID		NS								NS	NS	NS			NS									
1,2-Dibromoethane	NC	NC		NS								NS	NS	NS			NS									
1,1,1,2-Tetrachloroethane	77	ID		NS								NS	NS	NS			NS									
Isopropylbenzene	800	28		NS								NS	NS	NS			NS									
Bromoform	80 (A,W)	ID		NS								NS	NS	NS			NS									
1,1,2,2-Tetrachloroethane	8.5	78 (X)		NS								NS	NS	NS			NS									
1,2,3-Trichloropropane	42	NA		NS								NS	NS	NS			NS									
n-Propylbenzene	80	ID		NS								NS	NS	NS	**0.30**		NS									
Bromobenzene	18	NA		NS								NS	NS	NS			NS									
1,3,5-Trimethylbenzene	72 (E)	45		NS								NS	NS	NS			NS									
tert-Butylbenzene	80	ID		NS								NS	NS	NS			NS									
1,2,4-Trimethylbenzene	63 (E)	17		NS								NS	NS	NS			NS									
1,2,3-Trichlorobenzene	NC	NC		NS								NS	NS	NS			NS									
n-Butylbenzene	NC	NC		NS								NS	NS	NS	**0.270**		NS									

NOTES:

	Blank cells indicate no detectable concentrations	Blank cells indicate no detectable concentrations
X	Exceeds DW criteria	Exceeds DW criteria
X	Exceeds GSI criteria	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria	Exceeds both DW and GSI criteria
X	Compound also found in associated method blank, suggestin	Compound also found in associated method blank, suggesting a laboratory artifact.
NC	Insufficient data to develop criterion/no criterion	Insufficient data to develop criterion/no criterion
G	Groundwater to Surface Water Interface Criteria - calculated	Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID				MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Field Dupe	Trip Blank	Field Blank	Equip Blank
Date Collected				1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18
METALS ANALYTE (ug/L)	**DW**	GSI																			
Arsenic (dissolved)	10	10			2	1.094	**29**	<2	<2		0.548				4	**100**		**108**			
Arsenic	10	10			3	3	**34**	<2	<2		<2				10	**129**		**131**			
Chromium (dissolved)	100	160	G		41	9	<5	86	13		<5				37	1.217		0.537			
Chromium (total)	100	160	G		**244**	28	<5	**1,740**	**141**		<5				68	1.540		0.4368			
Chromium VI (dissolved)	100	160			<10	<10	<10	<10	<10		<10				<10	<10		<10			
Chromium VI (total)	100	160			<10	<10	<20	<10	<10		<10				<10	<20		<20			
Copper (dissolved)	1000	20	G		5	2.446	0.908	5	1.182		1.134				3.403	0.547		0.555			
Copper	1000	20	G		**21**	4.359	0.736	**34**	3.337		1.057				7	1.333		1.671			
Lead (dissolved)	4	44	G		1.836	1.058	<3	<3	<3		<3				2.084	<3		<3			
Lead	4	44	G		4	3	<3	0.739	<3		<3				**6**	<3		1.217			
Selenium (dissolved)	50	5			2	4	<5	2	**8**		1				1	1		1			
Selenium	50	5			2	4	<5	2	**11**		1				1	<5		1			
Zinc (dissolved)	2400	260	G		8	5	1.90	<5	2		2.24				7	2.480		2.5			
Zinc	2400	260	G		18	11	2.55	14	2.31		1.55				12	6		15			
VOC ANALYTE (ug/L)	**DW**	GSI																			
Acetone	730	1,700																		6.3	6.4
Methyl iodide	NC	NC																			
Carbon disulfide	800	NC																			
2 Butanone (MEK)	13,000	2,200																			
Chloromethane	260	NC																			
Vinyl Chloride	2.0	13					0.29				0.77					2		1			
Chloroethane	430	1,100																0.31			
trichlorofluoromethane	2,600	NA																			
1,1-Dichloroethene	7.0	130													0.31						
Methylene Chloride	5.0	1,500																			
trans-1,2-Dichloroethene	100	1,500													0.16						
1,1-Dichloroethane	880	740									0.97				2	0.70		0.75			
cis-1,2-Dichloroethene	70	620									2.00				51	3		2			
Tetrahydrofuran	95	11,000																			
Chloroform	80	350						2.00							0.24						
1,1,1-Trichloroethane	200	89																			
4-Methyl-2-pentanone (MIBK)	1800	ID																0.410			
2-Hexanone	1000	ID																0.95			
Carbon tetrachloride	5.0	45																			
Benzene	5.0	200					0.20				0.18										
Bromodichloromethane	80.0	NC						0.68													
Trichloroethene	5.0	200			3						5.00				**30**	2		0.83			
Toluene	790	270																			
Tetrachloroethene	5.0	60							**43**												
Chlorobenzene	100	25																			
Styrene	100	80																			

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Field Dupe	Trip Blank	Field Blank	Equip Blank
		Date Collected	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18
VOC ANALYTE (ug/L) {cont}	**DW**	GSI																		
Ethylbenzene	74	18																		
Total Xylenes	280	41																		
1,2 -Dichlorobenzene	600	13																		
1,3 -Dichlorobenzene	6.6	28		0.36	0.46	0.43		0.23						0.30	0.30		0.26			
1,2,4-Trimethylbenzene	63	17																		
1,2,3-Trimethylbenzene	NC	NC																		
Naphthalene	520	11																		
2-Methylnaphthalene	260	19																		
Diethyl ether	10 (E)	ID																		
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)																		
Acrylonitrile	2.6	2.0 (M); 1.2																		
Dichlorodifluoromethane	1,700	ID																		
Bromomethane	10	35																		
1,2-Dichloroethane	5.0 (A)	360 (X)																		
Trichloroethene	5.0 (A)	200 (X)																		
1,2-Dichloropropane	5.0 (A)	230 (X)																		
cis-1,3-Dichloropropene	NC	NC																		
trans-1,3-Dichloropropene	NC	NC																		
1,1,2-Trichloroethane	5.0 (A)	330 (X)																		
trans-1,4-Dichloro-2-butene	NC	NC																		
Dibromochloromethane	80 (A,W)	ID																		
1,2-Dibromoethane	NC	NC																		
1,1,1,2-Tetrachloroethane	77	ID																		
Isopropylbenzene	800	28																		
Bromoform	80 (A,W)	ID																		
1,1,2,2-Tetrachloroethane	8.5	78 (X)																		
1,2,3-Trichloropropane	42	NA																		
n-Propylbenzene	80	ID																		
Bromobenzene	18	NA																		
1,3,5-Trimethylbenzene	72 (E)	45																		
tert-Butylbenzene	80	ID																		
1,2,4-Trimethylbenzene	63 (E)	17																		
1,2,3-Trichlorobenzene	NC	NC																		
n-Butylbenzene	NC	NC																		
1,4-Dioxane (EPA8260)	7.2	2,800 (X)																		

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID				MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Field Dupe	Trip Blank	Field Blank	Equip Blank
Date Collected				1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18	1/28/18
PFA ANALYTE (ng/L)	**DW**	GSI																			
Perfluorobutanesulfonic acid (PFBS)	NC	NC														8.1		5.3			
Perfluorohexanesulfonic acid (PFHxS)	NC	NC													1.9						
Perfluoroheptanesulfonic Acid (PFHpS)	NC	NC																			
Perfluorooctanesulfonic acid (PFOS)	CC	12 (X)			35	7									44	16		16			
Perfluorodecanesulfonic acid (PFDS)	NC	NC																			
Perfluorobutanoic acid (PFBA)	NC	NC			3.1	4.8									4.8	180		180			
Perfluoropentanoic acid (PFPeA)	NC	NC				2.3															
Perfluorohexanoic acid (PFHxA)	NC	NC				2.5									2.6						
Perfluoroheptanoic acid (PFHpA)	NC	NC																			
Perfluorooctanoic acid (PFOA)	CC	12,000 (X)			4.4	4.1									6.1	4.2		4			
Perfluorononanoic acid (PFNA)	NC	NC																			
Perfluorodecanoic acid (PFDA)	NC	NC																			
Perfluoroundecanoic acid (PFUnA)	NC	NC																			
Perfluorododecanoic acid (PFDoA)	NC	NC																			
Perfluorotridecanoic Acid (PFTriA)	NC	NC																			
Perfluorotetradecanoic acid (PFTeA)	NC	NC																			
Perfluorooctane Sulfonamide (FOSA)	NC	NC																			

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	**X**
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed due to turbidity	NA
Combined PFOA and PFOS concentrations compared to 0.070 ppb (70 ppt) for the drinking water pathway.	CC

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

				Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Field Dupe	Trip Blank	Field Blank	Equip Blank
				Date Collected	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18		5/29/18	5/29/18
METALS ANALYTE (ug/L)	**DW**	GSI			**DRY**				**DRY**		**DRY**		**NS**	**NS**	**NS**			**NS**	**MW-102S**			
Arsenic (dissolved)	10	10						1.41									**23**					
Arsenic	10	10						9									**60**					
Chromium (dissolved)	100	160	G			1.62	14	0.168		1.01		0.328				4.13	0.431		14			
Chromium (total)	100	160	G			2.64	14	0.276		44		0.208				4.17	0.296		14			0.095
Chromium VI (dissolved)	100	160																				
Chromium VI (total)	100	160																				
Copper (dissolved)	1000	20	G			0.381	0.498			0.816		1.73				0.611			0.469			
Copper	1000	20	G			0.748	0.341			1.78		1.43				2.42						
Lead (dissolved)	4	44	G																			
Lead	4	44	G			0.408		0.068		0.304		0.121				0.067	0.062					
Selenium (dissolved)	50	5																				
Selenium	50	5																				
Zinc (dissolved)	2400	260	G			6	8	7		8		12				15	8		9			
Zinc	2400	260	G			6	7	8		7		8				6	4.76		9			1.79
VOC ANALYTE (ug/L)	**DW**	GSI																				
Acetone	730	1,700				5	4.5	6.4		5.6						5.9	8.2		5.6	4.8		8.4
Methyl iodide	NC	NC																				
Carbon disulfide	800	NC																				
2 Butanone (MEK)	13,000	2,200																				
Chloromethane	260	NC																				
Vinyl Chloride	2.0	13															**9**					
Chloroethane	430	1,100																				
trichlorofluoromethane	2,600	NA																				
1,1-Dichloroethene	7.0	130															1					
Methylene Chloride	5.0	1,500															0.17					
trans-1,2-Dichloroethene	100	1,500															0.25					
1,1-Dichloroethane	880	740															1					
cis-1,2-Dichloroethene	70	620															3					
Tetrahydrofuran	95	11,000																			4.8	
Chloroform	80	350																				0.46
1,1,1-Trichloroethane	200	89																				
4-Methyl-2-pentanone (MIBK)	1800	ID																				
2-Hexanone	1000	ID																				
Carbon tetrachloride	5.0	38 (X)																				
Benzene	5.0	200															0.20					
Bromodichloromethane	80.0	NC																				
Trichloroethene	5.0	200				1	0.67									**7**	**13**		0.7			
Toluene	790	270					0.39															
Tetrachloroethene	5.0	60								**45**												
Chlorobenzene	100	25																				
Styrene	100	80																				

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Field Dupe	Trip Blank	Field Blank	Equip Blank
		Date Collected	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18		5/29/18	5/29/18
VOC ANALYTE (ug/L) {cont}	**DW**	GSI																		
Ethylbenzene	74	18																		
Total Xylenes	280	49																		
1,2 -Dichlorobenzene	600	13																		
1,3 -Dichlorobenzene	6.6	28				0.23														
1,2,4-Trimethylbenzene	63	17																		
1,2,3-Trimethylbenzene	NC	NC																		
Naphthalene	520	11			0.21															
2-Methylnaphthalene	260	19																		
Diethyl ether	10 (E)	ID																		
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)																		
Acrylonitrile	2.6	2.0 (M); 1.2																		
Dichlorodifluoromethane	1,700	ID																		
Bromomethane	10	4.2; [5(M)]																		
1,2-Dichloroethane	5.0 (A)	360 (X)																		
Trichloroethene	5.0 (A)	200 (X)																		
1,2-Dichloropropane	5.0 (A)	230 (X)																		
cis-1,3-Dichloropropene	NC	NC																		
trans-1,3-Dichloropropene	NC	NC																		
1,1,2-Trichloroethane	5.0 (A)	330 (X)																		
trans-1,4-Dichloro-2-butene	NC	NC																		
Dibromochloromethane	80 (A,W)	ID																		
1,2-Dibromoethane	NC	NC																		
1,1,1,2-Tetrachloroethane	77	ID																		
Isopropylbenzene	800	28																		
Bromoform	80 (A,W)	ID																		
1,1,2,2-Tetrachloroethane	8.5	78 (X)																		
1,2,3-Trichloropropane	42	NA																		
n-Propylbenzene	80	ID																		
Bromobenzene	18	NA																		
1,3,5-Trimethylbenzene	72 (E)	45																		
tert-Butylbenzene	80	ID																		
1,2,4-Trimethylbenzene	63 (E)	17																		
1,2,3-Trichlorobenzene	NC	NC																		
n-Butylbenzene	NC	NC																		
1,4-Dioxane (EPA SIM8270)	7.2	2,800 (X)														0.13		0.025	0.025		

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	Field Dupe	Trip Blank	Field Blank	Equip Blank
		Date Collected	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18	5/29/18		5/29/18	5/29/18
PFA ANALYTE (ng/L)	**DW**	GSI																		
Perfluorobutane sulfonic acid (PFBS)	NC	NC			1.3												1.2			
Perfluoropentane sulfonic acid (PFPeS)	NC	NC																		
Perfluorohexane sulfonic acid (PFHxS)	NC	NC		1.4	2									1.6			2			
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC			0.18												1.1			
Perfluorooctane sulfonic acid (PFOS)	CC	12 (X)		12	12									47	27		12			
Perfluorononane sulfonic acid (PFNS)	NC	NC																		
Perfluorodecane sulfonic acid (PFDS)	NC	NC																		
Perfluorobutanoic acid (PFBA)	NC	NC													41					
Perfluoropentanoic acid (PFPeA)	NC	NC			1.2										1.7					
Perfluorohexanoic acid (PFHxA)	NC	NC			1.8												2.5			
Perfluoroheptanoic acid (PFHpA)	NC	NC			1.7															
Perfluorooctanoic acid (PFOA)	CC	12,000 (X)		2	4.2									1.7	2.5		4.3			
Perfluorononanoic acid (PFNA)	NC	NC		1.1	1										1.8					
Perfluorodecanoic acid (PFDA)	NC	NC																		
Perfluoroundecanoic acid (PFUnDA)	NC	NC													0.61					
Perfluorododecanoic acid (PFDoDA)	NC	NC		0.51																
Perfluorotridecanoic acid (PFTrDA)	NC	NC		0.82										0.78	0.85				0.94	1.1
Perfluorotetradecanoic acid (PFTeDA)	NC	NC		1.4	1.2															
Perfluorooctane sulfonamide (FOSA)	NC	NC																		
N-Methyl perfluorooctane sulfonamidoacetic acid	NC	NC																		
N-Ethyl perfluorooctane sulfonamidoacetic acid	NC	NC																		
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC																		
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC																		
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC																		

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	**X**
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed due to turbidity	NA
Combined PFOA and PFOS concentrations compared to 0.070 ppb (70 ppt) for the drinking water pathway.	CC

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

				Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Field Dup (Dup-1)	Field Dup (Dup-2)	Trip Blank	Trip Blank	Field Blank	Field Blank (FB2)	Equip Blank	Equip Blank
				Date Collected	9/5/18	9/5/18	8/30/18	9/5/18	9/5/18	9/5/18	9/5/18	8/30/18	8/30/18	9/5/18	8/30/18	8/30/18	9/5/18	8/30/18	9/5/18	9/5/18	9/5/18	9/5/18	8/30/18	9/5/18	8/30/18	9/5/18	8/30/18	9/5/18
METALS ANALYTE (ug/L)	**DW**	GSI																		**MW-104S**	**MW-109S**						
Arsenic (dissolved)	10	10						**19**						4	1		**52**		1		3				1		1
Arsenic	10	10						**53**		1	1			5	3		**104**		2		5				1		1
Chromium (dissolved)	100	160	G		1				10	1	6				1	4		1	7	1							
Chromium (total)	100	160	G		2	6			**388**	62	**789**				1			1	9	13							
Chromium VI (dissolved)	100	160				1																					
Chromium VI	100	160														5			6								
Copper (dissolved)	1000	20	G	1	1	1		2	1	4	2	1	1	7	1		1	2	1								
Copper	1000	20	G		1	1		13	2	23	1	1	1		1		1	3	1								
Lead (dissolved)	4	44	G																								
Lead	4	44	G						1	1																	
Selenium (dissolved)	50	5		1	4	2	3	3	**8**	1		2	4		5	1		1	9	2				1		1	
Selenium	50	5		2	4	4	4	3	**9**	5		4	1	3	2	3	3	3	6	2			1	1		1	
Zinc (dissolved)	2400	260	G	2	4	3	1	3	2	2	4	3	3	5	6	2	5	4	1	2			2	2	1	1	
Zinc	2400	260	G	3	2	5	2	5	2	6	2	4	5	3	2	4	5	3	1	2			1	1	1	1	
VOC ANALYTE (ug/L)	**DW**	GSI																									
Acetone	730	1,700			2.55	2.72	5.20	0.81	1.12	0.63	0.61		2.32			4.98	2.11	18.6		2.75	5.13	4.54	1.26	7.48	1.74	7.35
Methyl iodide	NC	NC																									
Carbon disulfide	800	NC																									
2 Butanone (MEK)	13,000	2,200					1.14									1.09								0.32	2.48		
Chloromethane	260	NC																			1.92						
Vinyl Chloride	2.0	13												42			5		9.5		**41**						
Chloroethane	430	1,100																									
trichlorofluoromethane	2,600	NA																									
1,1-Dichloroethene	7.0	130												2			0.66										
Methylene Chloride	5.0	1,500																									
trans-1,2-Dichloroethene	100	1,500												0.7							0.66						
1,1-Dichloroethane	880	740												1		0.27	0.63		3.6		1						
cis-1,2-Dichloroethene	70	620		9							0.34		68			5	2		490	0.36	65						
Tetrahydrofuran	95	11,000																	16								
Chloroform	80	350						1				1													0.4	0.4	0.3
1,1,1-Trichloroethane	200	89																									
4-Methyl-2-pentanone (MIBK)	1800	ID																									
2-Hexanone	1000	ID																									
Carbon tetrachloride	5.0	38 (X)										4															
Benzene	5.0	200					0.67																				
Bromodichloromethane	80.0	NC						0.5																		0.35	
Trichloroethene	5.0	200		4	4	0.39					1		17		12	7	1	210		17							
Toluene	790	270																									
Tetrachloroethene	5.0	60							40										40	0.22							
Chlorobenzene	100	25																									
Styrene	100	80																									

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Field Dup (Dup-1)	Field Dup (Dup-2)	Trip Blank	Trip Blank	Field Blank	Field Blank (FB2)	Equip Blank	Equip Blank
		Date Collected	9/5/18	9/5/18	8/30/18	9/5/18	9/5/18	9/5/18	9/5/18	8/30/18	8/30/18	9/5/18	8/30/18	8/30/18	9/5/18	8/30/18	9/5/18	9/5/18	9/5/18	8/30/18	9/5/18	8/30/18	9/5/18	8/30/18	9/5/18
VOC ANALYTE (ug/L) {cont}	**DW**	GSI																							
Ethylbenzene	74	18																							
Total Xylenes	280	49																							
1,2 -Dichlorobenzene	600	13																							
1,3 -Dichlorobenzene	6.6	28																							
Naphthalene	520	11																							
2-Methylnaphthalene	260	19																	0.23						
Diethyl ether	10 (E)	ID																							
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)																							
Acrylonitrile	2.6	2.0 (M); 1.2																							
Dichlorodifluoromethane	1,700	ID																							
Bromomethane	10	4.2; [5(M)]																							
1,2-Dichloroethane	5.0 (A)	360 (X)																							
Trichloroethene	5.0 (A)	200 (X)																							
1,2-Dichloropropane	5.0 (A)	230 (X)																							
cis-1,3-Dichloropropene	NC	NC																							
trans-1,3-Dichloropropene	NC	NC																							
1,1,2-Trichloroethane	5.0 (A)	330 (X)																							
trans-1,4-Dichloro-2-butene	NC	NC																							
Dibromochloromethane	80 (A,W)	ID																							
1,2-Dibromoethane	NC	NC																							
1,1,1,2-Tetrachloroethane	77	ID																							
Isopropylbenzene	800	28																							
Bromoform	80 (A,W)	ID																							
1,1,2,2-Tetrachloroethane	8.5	78 (X)																							
1,2,3-Trichloropropane	42	NA																							
n-Propylbenzene	80	ID																							
Bromobenzene	18	NA																							
1,3,5-Trimethylbenzene	72 (E)	45																							
tert-Butylbenzene	80	ID																							
1,2,4-Trimethylbenzene	63 (E)	17																							
1,2,4-Trichlorobenzene	NC	NC																					0.21		
1,2,3-Trichlorobenzene	NC	NC																					0.21		
n-Butylbenzene	NC	NC																							

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Field Dup (Dup-1)	Field Dup (Dup-2)	Trip Blank	Trip Blank	Field Blank	Field Blank (FB2)	Equip Blank	Equip Blank
Date Collected			9/5/18	9/5/18	8/30/18	9/5/18	9/5/18	9/5/18	9/5/18	8/30/18	8/30/18	9/5/18	8/30/18	8/30/18	9/5/18	8/30/18	9/5/18	9/5/18	9/5/18	8/30/18	9/5/18	8/30/18	9/5/18	8/30/18	9/5/18
PFA ANALYTE (ng/L)	**DW**	GSI																							
Perfluorobutane sulfonic acid (PFBS)	NC	NC	2.5	1.4	2	2.2	1.3	1.8	4.6		1.7	2.9	3.6	2.4	1.4	5	1.7	2.3	1.7						
Perfluoropentane sulfonic acid (PFPeS)	NC	NC																							
Perfluorohexane sulfonic acid (PFHxS)	NC	NC	4	1.9	6.1		2.1	12	3.3	2.7	2.9	3.2	4.3	3.8		2.6	2.4	12	2.6						
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC	1.4	1.2	2.4			2.5	1.3			2.6						2.1							
Perfluorooctane sulfonic acid (PFOS)	CC	12	20	33	11	91			7.3	18	6	27	8.5	59	10	13	26		30						
Perfluorononane sulfonic acid (PFNS)	NC	NC																							
Perfluorodecane sulfonic acid (PFDS)	NC	NC																							
Perfluorobutanoic acid (PFBA)	NC	NC		3.8	3.2			3.2	5.9			2.9	6.7		48	7.1	2.7		3.2						
Perfluoropentanoic acid (PFPeA)	NC	NC		1.2	1.4				1.1				3	1.3			3.6								
Perfluorohexanoic acid (PFHxA)	NC	NC	1	1.5	4.1		1.2	1.6	2			1.7	4.8			1	3.3	1.7			1.3		1.6		1.2
Perfluoroheptanoic acid (PFHpA)	NC	NC			2				2				3.7			1.3	3.3	2.4							
Perfluorooctanoic acid (PFOA)	CC	12,000	2	4.5	6.1	2.6	0.79	4.5	12	2.1	0.58	2.6	11	1.7	2.2	2.6	4.3	4.1	2.8						
Perfluorononanoic acid (PFNA)	NC	NC		1.2		1.1						1.2					1.3		1.1						
Perfluorodecanoic acid (PFDA)	NC	NC				0.53			0.58																
Perfluoroundecanoic acid (PFUnDA)	NC	NC																							
Perfluorododecanoic acid (PFDoDA)	NC	NC																							
Perfluorotridecanoic acid (PFTrDA)	NC	NC																							
Perfluorotetradecanoic acid (PFTeDA)	NC	NC					1.6		2.8			1.7					1.9				3.3		1.8	1.9	1.7
Perfluorooctane sulfonamide (FOSA)	NC	NC																					0.44		
N-Methyl perfluorooctane sulfonamidoacetic acid	NC	NC																							
N-Ethyl perfluorooctane sulfonamidoacetic acid	NC	NC				0.9																			
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC																							
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC																							
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC																							

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	**X**
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed due to turbidity	NA
Combined PFOA and PFOS concentrations compared to 0.070 ppb (70 ppt) for the drinking water pathway.	CC

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID				MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Field Dup (Dupe-1)	Field Dup (Dupe-2)	Trip Blank	Field Blank	Field Blank	Equip Blank
Date Collected				DRY	DRY	02/27/19	02/28/19	02/27/19	02/27/19	NS	02/27/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/27/19	02/28/19	02/28/19
METALS ANALYTE (ug/L)	**DW**	GSI																	**MW-112S**	**MW-114S**				
Arsenic (dissolved)	10	10					10				0.711	0.445	2	1.05	0.317	**35**	1.11	**28**	9	**20**				
Arsenic	10	10					**30**				0.33	0.265	**39**	1.952	0.759	**102**	**13**	**86**	0.101	**80**				
Chromium (dissolved)	100	160	G			2.604	0.103	0.105	1.711			0.155	0.246	0.172	4.979	0.357	1.61	0.172	0.436			0.131		0.052
Chromium (total)	100	160	G			4.664	0.251	43	65			0.354	0.6	0.522	4.651	0.507	13	0.258	0.417	0.412		0.175	0.748	0.655
Chromium VI (dissolved)	100	160																						
Chromium VI	100	160																						
Copper (dissolved)	1000	20	G			0.937		1.208	1.375		1.733	0.993		0.704	1.32		1.34	0.823		0.434		1.685	1.53	1.47
Copper	1000	20	G			0.679		1.871	2.247		1.124	0.979	0.381	0.963	0.691		3.06	1.92		2.25		2.092	1.59	1.24
Lead (dissolved)	4	44	G								0.706													
Lead	4	44	G									0.23	0.206				1.14	0.191		0.208				
Selenium (dissolved)	50	5				2		4	8			3												
Selenium	50	5				3		4	9			0												
Zinc (dissolved)	2400	260	G			7	3.45	1	5		11	6	3	3	7	4	8	4	3	3		4	6	7
Zinc	2400	260	G			1.482		0.892	1.577		7	2.24	2.19	1.61	0.776	0.774	13	3.98		5		1.814	2.27	0.962
VOC ANALYTE (ug/L)	**DW**	GSI																						
Acetone	730	1,700				7.88		8.1	6.7		7.8	7.6	9.51	9.07	8.79	12.41	11.34	33.8	11.74	35.1	6.99	7.3	9.10	9.36
Methyl iodide	NC	NC																						
Carbon disulfide	800	NC																						
2 Butanone (MEK)	13,000	2,200					3.13						0.34	0.3	0.33	1.61	1.95	11.1	1.63	11.9	0.64		0.78	0.77
Chloromethane	260	NC																						
Vinyl Chloride	2	13					0.64				0.88		**5**			2	1	**12**	2	**12**				
Chloroethane	430	1,100																						
trichlorofluoromethane	2,600	NA																						
1,1-Dichloroethene	7	130											0.6			0.41			0.38					
Methylene Chloride	5	1,500																						
trans-1,2-Dichloroethene	100	1,500											0.41					1.9		1.80				
1,1-Dichloroethane	880	740									0.55		0.97		0.76	0.82		3.2	0.79	3.5				
cis-1,2-Dichloroethene	70	620									2		9		13	2	2	**295**	1	**290**				
Tetrahydrofuran	95	11,000					2.3										1.9	11.1		11.9				
Chloroform	80	350						2				1			0.25									
1,1,1-Trichloroethane	200	89																		1.7				
4-Methyl-2-pentanone (MIBK)	1800	ID														0.31			0.38					
2-Hexanone	1000	ID																						
Carbon tetrachloride	5.0	38	X									2												
Benzene	5.0	200					1				0.24													
Bromodichloromethane	80.0	NC						0.25																
Trichloroethene	5.0	200									1	0.25	**13**		**39**	3	**9**	**162**	3	**163**				
Toluene	790	270					0.32																	
Tetrachloroethene	5.0	60							**78**															
Chlorobenzene	100	25					2																	
Styrene	100	80														0.58	0.28		0.64					

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Field Dup (Dupe-1)	Field Dup (Dupe-2)	Trip Blank	Field Blank	Field Blank	Equip Blank
		Date Collected	DRY	DRY	02/27/19	02/28/19	02/27/19	02/27/19	NS	02/27/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/27/19	02/28/19	02/28/19
VOC ANALYTE (ug/L) {cont}	**DW**	GSI																					
Ethylbenzene	74	18																					
Total Xylenes	280	49																					
1,2 -Dichlorobenzene	600	13																					
1,3 -Dichlorobenzene	6.6	28																					
Naphthalene	520	11																					
2-Methylnaphthalene	260	19				0.18																	
Diethyl ether	10 (E)	ID																					
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)																					
Acrylonitrile	2.6	2.0 (M); 1.2																					
Dichlorodifluoromethane	1,700	ID																					
Bromomethane	10	4.2; [5(M)]																					
1,2-Dichloroethane	5.0 (A)	360 (X)																					
1,2-Dichloropropane	5.0 (A)	230 (X)																					
cis-1,3-Dichloropropene	NC	NC																					
trans-1,3-Dichloropropene	NC	NC																					
1,1,2-Trichloroethane	5.0 (A)	330 (X)																					
trans-1,4-Dichloro-2-butene	NC	NC																					
Dibromochloromethane	80 (A,W)	ID																					
1,2-Dibromoethane	NC	NC																					
1,1,1,2-Tetrachloroethane	77	ID																					
Isopropylbenzene	800	28																					
Bromoform	80 (A,W)	ID																					
1,1,2,2-Tetrachloroethane	8.5	78 (X)																					
1,2,3-Trichloropropane	42	NA																					
n-Propylbenzene	80	ID																					
Bromobenzene	18	NA																					
1,3,5-Trimethylbenzene	72 (E)	45																					
tert-Butylbenzene	80	ID																					
1,2,4-Trimethylbenzene	63 (E)	17																					
1,2,4-Trichlorobenzene	NC	NC																					
1,2,3-Trichlorobenzene	NC	NC																					
n-Butylbenzene	NC	NC																					

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Field Dup (Dupe-1)	Field Dup (Dupe-2)	Trip Blank	Field Blank	Field Blank	Equip Blank
		Date Collected	DRY	DRY	02/27/19	02/28/19	02/27/19	02/27/19	NS	02/27/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/28/19	02/27/19	02/28/19	02/28/19
PFA ANALYTE (ng/L)	**DW**	GSI	**NS**	**NS**	**NS**	**01/17/19**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**01/17/19**	**NS**	**NS**	**NS**	**NS**	**NS**
Perfluorobutane sulfonic acid (PFBS)	NC	NC																					
Perfluoropentane sulfonic acid (PFPeS)	NC	NC																					
Perfluorohexane sulfonic acid (PFHxS)	NC	NC																					
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC																					
Perfluorooctane sulfonic acid (PFOS)	CC	12				**90**												**90**					
Perfluorononane sulfonic acid (PFNS)	NC	NC																					
Perfluorodecane sulfonic acid (PFDS)	NC	NC																					
Perfluorobutanoic acid (PFBA)	NC	NC																					
Perfluoropentanoic acid (PFPeA)	NC	NC																					
Perfluorohexanoic acid (PFHxA)	NC	NC																					
Perfluoroheptanoic acid (PFHpA)	NC	NC																					
Perfluorooctanoic acid (PFOA)	CC	12,000																					
Perfluorononanoic acid (PFNA)	NC	NC																					
Perfluorodecanoic acid (PFDA)	NC	NC																					
Perfluoroundecanoic acid (PFUnDA)	NC	NC																					
Perfluorododecanoic acid (PFDoDA)	NC	NC																					
Perfluorotridecanoic acid (PFTrDA)	NC	NC																					
Perfluorotetradecanoic acid (PFTeDA)	NC	NC																					
Perfluorooctane sulfonamide (FOSA)	NC	NC																					
N-Methyl perfluorooctane sulfonamidoacetic acid	NC	NC																					
N-Ethyl perfluorooctane sulfonamidoacetic acid	NC	NC																					
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC																					
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC																					
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC																					

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	**X**
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed due to turbidity	NA
Combined PFOA and PFOS concentrations compared to 0.070 ppb (70 ppt) for the drinking water pathway.	CC

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

				Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe 1	Dupe 2	Equipment Blank	Equipment Blank	Field Blank	Field Blank	Trip Blank	Trip Blank
				Date Collected	07/16/2019	07/16/2019	07/17/2019	07/17/2019	07/16/2019	07/16/2019	07/16/2019	07/16/2019	07/17/2019	07/17/2019	07/17/2019	07/17/2019	07/16/2019	07/17/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019
METALS ANALYTE (ug/L)	**DW**	GSI																		MW-112S	MW-114S						
Arsenic, Dissolved	10	10			0.298	0.475	0.577	7	0.496	0.399	<0.002	0.485	0.483	10	0.295	0.535	**15**	1.38	**16**	**15**	**18**	<0.002	<0.002	0.11	<0.002	NA	NA
Arsenic	10	10			0.572	0.521	<0.002	**39**	0.358	1.03	0.275	<0.002	0.328	**73**	1.72	0.942	**68**	5	**101**	**63**	**95**	0.111	<0.002	0.201	<0.002	NA	NA
Chromium, Dissolved	100	160	G		0.345	3.944	5	0.246	0.302	0.802	0.328	0.286	0.326	0.265	0.406	5	0.512	1.132	0.171	0.343	0.329	0.215	0.078	0.283	1.827	NA	NA
Chromium	100	160	G		0.56	2.54	6	0.382	34	83	4.544	0.301	0.575	2.927	1.283	6	0.495	1.634	0.371	0.365	0.369	0.154	0.184	0.104	1.791	NA	NA
Chromium VI, Dissolved	100	160			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA
Chromium VI	100	160			<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	NA	NA
Copper, Dissolved	1000	20	G		0.829	2.404	0.579	<0.005	1.698	2.039	0.898	1.576	0.545	<0.005	0.497	0.752	1.826	1.465	0.879	<0.005	0.707	0.321	0.157	0.194	<0.005	NA	NA
Copper	1000	20	G		0.816	3.124	0.742	0.775	3.404	4.683	1.603	1.663	0.975	0.774	0.543	0.938	0.458	1.144	1.317	1.106	1.541	0.177	0.23	0.178	<0.005	NA	NA
Lead, Dissolved	4	44	G		<0.003	1.434	<0.003	<0.003	<0.003	0.673	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.263	<0.003	<0.003	<0.003	<0.003	0.248	<0.003	0.18	<0.003	NA	NA
Lead	4	44	G		<0.003	0.361	<0.003	<0.003	<0.003	0.303	0.216	<0.003	0.37	<0.003	<0.003	0.214	0.274	0.195	0.385	<0.003	0.615	0.083	0.076	0.098	<0.003	NA	NA
Selenium, Dissolved	50	5			<0.005	<0.005	<0.005	<0.005	<0.005	2.39	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA
Selenium	50	5			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA
Zinc, Dissolved	2400	260	G		7	9	8	4.05	7	7	7	27	1.13	1.92	5	5	20	6	13	3.34	4.37	4.64	3.23	2.71	2.61	NA	NA
Zinc	2400	260	G		2.75	7	2.47	1.04	4.85	6	2.62	22	5	4.43	2.37	3.3	2	6	12	2.32	10	1.51	1.26	0.56	<0.005	NA	NA
VOC ANALYTE (ug/L)	**DW**	GSI																		MW-112S	MW-114S						
Diethyl ether	10 (E)	ID			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<50	<10	<10	<10	<10	<10	<10
Acetone	730	1,700			<50	<50	<50	4.1	<50	<50	<50	<50	<50	<50	<50	<50	4.8	<50	48	4.1	51	<50	5.9	<50	<50	4.1	<50
Methyl iodide	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Carbon disulfide	800	NC			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	0.15	0.2	0.19	0.16	<5	<5
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
Acrylonitrile	2.6	2.0 (M); 1.2			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10	<2	<10	<2	<2	<2	<2	<2	<2
2-Butanone (MEK)	13,000	2,200			<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	17	<25	18	<25	<25	<25	<25	<25	<25
Dichlorodifluoromethane	1,700	ID			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
Chloromethane	260	NC			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
Vinyl chloride	2	13			<1	<1	<1	<1	<1	<1	<1	<1	<1	**7**	<1	<1	**7**	0.78	**8**	**6**	**8**	<1	<1	<1	<1	<1	<1
Bromomethane	10	4.2; [5(M)]			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
Chloroethane	430	1,100			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	2,600	NA			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	7	130			<1	<1	<1	<1	<1	<1	<1	<1	<1	0.82	<1	<1	1	<1	<5	1	<5	<1	<1	<1	<1	<1	<1
Methylene chloride	5	1,500			<5	<5	<5	<5	<5	<5	0.18	0.17	0.18	0.19	0.19	<5	<5	<5	2.5	0.19	2.5	<5	2.34	<5	<5	0.19	<5
trans-1,2-Dichloroethene	100	1,500			<1	<1	<1	<1	<1	<1	<1	<1	<1	0.42	<1	<1	0.29	<1	1.35	0.31	1.45	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	880	740			<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	0.85	<1	2.5	0.78	2.55	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	620			12	<1	<1	<1	<1	<1	<1	<1	<1	9	<1	0.82	3	1	**244**	3	**244**	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	95	11,000			<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	9.3	<90	9.8	<90	<90	<90	<90	2	1.2
Chloroform	80	350			<1	<1	<1	<1	0.29	<1	<1	<1	1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Bromochloromethane	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	89			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.7	<1	1.5	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	1800	ID			<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<250	<50	<250	<50	<50	<50	<50	<50	<50
2-Hexanone	1000	ID			<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	2.05	<50	1.65	<50	<50	<50	<50	<50	<50
Carbon tetrachloride	5.0	38	X		<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Benzene	5.0	200			<1	<1	<1	0.26	<1	<1	<1	<1	<1	<1	<1	<1	0.19	<1	<5	0.21	<5	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	5.0 (A)	360 (X)			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Trichloroethene	5.0	200			**10**	1	<1	<1	<1	<1	<1	<1	<1	**11**	<1	**10**	**9**	**12**	**179**	**9**	**169**	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	5.0 (A)	230 (X)			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Bromodichloromethane	80.0	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Dibromomethane	230	NA			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Toluene	790	270			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	0.17	<5	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	5.0 (A)	330 (X)			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Tetrachloroethene	5.0	60			<1	0.14	<1	<1	<1	**43**	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Dibromochloromethane	80 (A,W)	ID			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Chlorobenzene	100	25			<1	<1	<1	0.47	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	77	ID			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

	Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe 1	Dupe 2	Equipment Blank	Equipment Blank	Field Blank	Field Blank	Trip Blank	Trip Blank
	Date Collected	07/16/2019	07/16/2019	07/17/2019	07/17/2019	07/16/2019	07/16/2019	07/16/2019	07/16/2019	07/17/2019	07/17/2019	07/17/2019	07/17/2019	07/16/2019	07/17/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019
VOC ANALYTE (ug/L) {cont}	**DW** GSI																							
Ethylbenzene	74 18	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Total Xylenes	280 49	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Styrene	100 80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Isopropylbenzene	800 28	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
Bromoform	80 (A,W) ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	8.5 78 (X)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	42 NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
n-Propylbenzene	80 ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Bromobenzene	18 NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	72 (E) 45	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	80 ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	63 (E) 17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	230 ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	NC NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	6.6 28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	75 17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	600 13	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	NC NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
n-Butylbenzene	NC NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	<1
Hexachloroethane	21 6.7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-chloropropane	NC NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	NC NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	NC NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
Naphthalene	520 11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	<5	<5	<5	<5	<5
2-Methylnaphthalene	260 19	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	<30	<5	**0.26**	<5	**0.22**	<5	<5

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe 1	Dupe 2	Equipment Blank	Equipment Blank	Field Blank	Field Blank	Trip Blank	Trip Blank
	Date Collected			07/16/2019	07/16/2019	07/17/2019	07/17/2019	07/16/2019	07/16/2019	07/16/2019	07/16/2019	07/17/2019	07/17/2019	07/17/2019	07/17/2019	07/16/2019	07/17/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019	07/16/2019	07/17/2019
PFA ANALYTE (ng/L)	**DW**	GSI		**NS**	**NS**			**NS**	**NS**	**NS**	**NS**					**NS**			**NS**	**MW-114S**	**NS**				**7/17/2019**	
Perfluorobutanoic acid (PFBA)	NC	NC		NA	NA	<19	<19	NA	NA	NA	NA	<19	<19	20	<19	NA	<19	<19	NA	<19	NA	<19	NA	<20	NA	<19
Perfluoropentanoic acid (PFPeA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorohexanoic acid (PFHxA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorobutane sulfonic acid (PFBS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluoroheptanoic acid (PFHpA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluoropentane sulfonic acid (PFPeS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorooctanoic acid (PFOA)	CC	12,000		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorohexane sulfonic acid (PFHxS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorononanoic acid (PFNA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorodecanoic acid (PFDA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorooctane sulfonic acid (PFOS)	CC	12		NA	NA	11	**93**	NA	NA	NA	NA	11	**28**	<9.6	**36**	NA	**20**	**31**	NA	**32**	NA	<9.4	NA	<10	NA	<9.3
Perfluorooctane Sulfonic Acid - LN (PFOS-LN)	NC	NC		NA	NA	<9.7	44	NA	NA	NA	NA	<9.7	12	<9.6	16	NA	<9.5	17	NA	16	NA	<9.4	NA	<10	NA	<9.3
Perfluorooctane Sulfonic Acid - BR (PFOS-BR)	NC	NC		NA	NA	<9.7	48	NA	NA	NA	NA	<9.7	16	<9.6	21	NA	16	15	NA	16	NA	<9.4	NA	<10	NA	<9.3
Perfluoroundecanoic acid (PFUnDA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorononane sulfonic acid (PFNS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorododecanoic acid (PFDoDA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorodecane sulfonic acid (PFDS)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorotridecanoic acid (PFTrDA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorooctane sulfonamide (FOSA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3
Perfluorotetradecanoic acid (PFTeDA)	NC	NC		NA	NA	<9.7	<9.4	NA	NA	NA	NA	<9.7	<9.7	<9.6	<9.6	NA	<9.5	<9.5	NA	<9.5	NA	<9.4	NA	<10	NA	<9.3

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	**X**
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed due to turbidity	NA
Combined PFOA and PFOS concentrations compared to 0.070 ppb (70 ppt) for the drinking water pathway.	CC

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID				MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe 1	Dupe 2	Field Blank	Equip Blank	Field Blank	Equipment Blank	Trip	Equip	Field
Date Collected				02/25/2020	02/25/2020	02/25/2020	02/28/2020	02/25/2020	02/25/2020	02/25/2020	02/25/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/25/2020	02/25/2020	02/27/2020	02/27/2020	02/28/2020	02/28/2020	02/28/2020
METALS ANALYTE (ug/L)	**DW**	GSI																	**MW-112S**	**MW-114S**							
Arsenic, Dissolved	10	10		<0.002	<0.002	<0.002	4	<0.002	<0.002	<0.002	<0.002	0.257	9	0.518	<0.002	**13**	1.511	**25**	**13**	**24**	NA	NA	NA	NA	NA	NA	NA
Arsenic	10	10		<0.002	<0.002	<0.002	**46**	<0.002	0.316	1.173	0.465	<0.002	**69**	2	0.998	**41**	3	**62**	**43**	**69**	NA	NA	NA	NA	NA	NA	NA
Chromium, Dissolved	100	160	G	0.275	0.891	7	0.204	0.562	0.463	0.719	<0.005	0.295	0.138	0.312	6	0.214	0.518	13	0.39	<0.005	NA	NA	NA	NA	NA	NA	NA
Chromium	100	160	G	0.42	2.753	6	0.388	16	**280**	**764**	0.185	0.431	1.767	0.862	6	0.349	6	0.97	0.356	1.084	NA	NA	NA	NA	NA	NA	NA
Chromium VI, Dissolved	100	160		<0.005	<0.005	8	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	4	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA
Chromium VI	100	160		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	4	<0.025	<0.5	<0.5	<0.5	<0.5	<0.025	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved	1000	20	G	0.405	<0.005	<0.005	<0.005	3.473	0.396	0.576	0.86	1.357	<0.005	<0.005	0.501	<0.005	0.492	0.751	0.391	0.611	NA	NA	NA	NA	NA	NA	NA
Copper	1000	20	G	<0.005	0.698	0.516	0.528	9	6	14	0.996	0.564	<0.005	0.835	0.694	<0.005	0.973	6	<0.005	6	NA	NA	NA	NA	NA	NA	NA
Lead, Dissolved	4	44	G	<0.003	<0.003	<0.003	0.208	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.584	<0.003	NA	NA	NA	NA	NA	NA	NA
Lead	4	44	G	0.249	0.283	<0.003	<0.003	<0.003	<0.003	0.886	0.283	<0.003	<0.003	0.242	0.339	<0.003	0.4	4	<0.003	4	NA	NA	NA	NA	NA	NA	NA
Selenium, Dissolved	50	5		<0.005	<0.005	<0.005	<0.005	<0.005	9	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA
Selenium	50	5		<0.005	<0.005	<0.005	<0.005	<0.005	9	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved	2400	260	G	6	4.654	5	2.299	9	1.504	1.216	9	7	3.151	3.037	6	2.665	8	27	6	29	NA	NA	NA	NA	NA	NA	NA
Zinc	2400	260	G	1.56	2.074	1.632	2.05	14	1.948	7	6	2.742	2.004	1.879	1.594	1.588	6	44	1.221	43	NA	NA	NA	NA	NA	NA	NA
VOC ANALYTE (ug/L)	**DW**	GSI																	**MW-112S**	**MW-114S**							
Diethyl ether	10 (E)	ID		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	730	1,700		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Methyl iodide	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	800	NC		<5	<5	<5	0.26	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.15	0.18	0.17	0.17
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	2.6	2.0 (M); 1.2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-Butanone (MEK)	13,000	2,200		<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Dichlorodifluoromethane	1,700	ID		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloromethane	260	NC		0.15	<5	<5	<5	<5	<5	<5	<5	<5	0.13	<5	<5	<5	0.44	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	2	13		<1	<1	<1	0.81	<1	<1	<1	<1	<1	**18**	<1	<1	**10**	0.79	**5**	**11**	**3**	<1	<1	<1	<1	<1	<1	<1
Bromomethane	10	4.2; [5(M)]		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroethane	430	1,100		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.39	<5	<5
Trichlorofluoromethane	2,600	NA		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	7	130		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	1	<1	0.84	1	0.82	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	5	1,500		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.11	<5	<5	0.13	<5	0.43	0.41	0.36	0.76	0.22	0.36	0.45
trans-1,2-Dichloroethene	100	1,500		<1	<1	<1	<1	<1	<1	<1	<1	<1	0.5	<1	<1	0.28	<1	0.78	0.24	0.83	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	880	740		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	0.99	<1	3	1	2	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	620		9	<1	<1	<1	<1	<1	<1	0.11	<1	17	<1	0.35	3	0.44	**127**	3	**125**	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	95	11,000		<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	0.22	<90	<90	<90	<90	<90
Chloroform	80	350		<1	<1	<1	<1	0.71	<1	0.24	<1	0.81	<1	<1	<1	<1	<1	0.22	<1	0.23	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	200	89		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	2	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	1800	ID		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
2-Hexanone	1000	ID		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Carbon tetrachloride	5.0	38	X	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzene	5.0	200		<1	<1	<1	0.26	<1	<1	<1	<1	<1	<1	<1	<1	0.2	<1	<1	0.22	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	5.0 (A)	360 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	5.0	200		**16**	2	0.16	<1	<1	<1	<1	0.15	0.14	**13**	<1	**6**	**6**	**7**	**335**	**6**	**350**	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	5.0 (A)	230 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	80.0	NC		<1	<1	<1	<1	0.17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	230	NA		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	790	270		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	5.0 (A)	330 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	5.0	60		<1	<1	<1	<1	<1	**78**	<1	<1	<1	<1	<1	<1	<1	<1	0.2	<1	0.18	<1	<1	<1	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	80 (A,W)	ID		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	100	25		<1	<1	<1	0.53	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	77	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe 1	Dupe 2	Field Blank	Equip Blank	Field Blank	Equipment Blank	Trip	Equip	Field
		Date Collected	02/25/2020	02/25/2020	02/25/2020	02/28/2020	02/25/2020	02/25/2020	02/25/2020	02/25/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/25/2020	02/25/2020	02/27/2020	02/27/2020	02/28/2020	02/28/2020	02/28/2020
VOC ANALYTE (ug/L) {cont}	**DW**	GSI																**MW-112S**	**MW-114S**							
Ethylbenzene	74	18	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Xylenes	280	49	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
p,m-Xylene			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	100	80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	800	28	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	80 (A,W)	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	8.5	78 (X)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	42	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	80	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	18	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	72 (E)	45	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	80	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	63 (E)	17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	230	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	6.6	28	0.32	0.25	0.11	<1	0.37	0.26	0.23	0.26	0.13	0.1	0.14	0.21	0.19	0.17	<1	0.2	<1	<1	0.12	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	75	17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.13	<1	<1
1,2-Dichlorobenzene	600	13	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.15	<1	<1	0.11	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trimethylbenzene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	21	6.7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-chloropropane	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.18	0.13	0.12
1,2,3-Trichlorobenzene	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.12	0.11	<5	<5	0.16	<5	<5
Naphthalene	520	11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.17	0.15	0.13	<5	<5	<5	<5
2-Methylnaphthalene	260	19	<5	<5	0.1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.18	0.15	0.12	<5	0.13	<5	<5

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe 1	Dupe 2	Field Blank	Equip Blank	Field Blank	Equipment Blank	Trip	Equip	Field
	Date Collected			02/25/2020	02/25/2020	02/25/2020	02/28/2020	02/25/2020	02/25/2020	02/25/2020	02/25/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/27/2020	02/25/2020	02/25/2020	02/27/2020	02/27/2020	02/28/2020	02/28/2020	02/28/2020
PFA ANALYTE (ng/L)	**DW**	GSI																									
Perfluorobutanoic acid (PFBA)	NC	NC		<20	<21	NA	<19	NA	NA	8.1	<19	NA	5.5	<19	<20	<19	<19	<20	<20	<19	<19	<19	<21	<19	<20	<19	<19
Perfluoropentanoic acid (PFPeA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorohexanoic acid (PFHxA)	400,000	NC		<9.8	1.7	NA	<9.5	NA	NA	3.5	<9.6	NA	1.4	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorobutane sulfonic acid (PFBS)	420	NC		2.7	2.3	NA	<9.5	NA	NA	4.5	1.9	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluoroheptanoic acid (PFHpA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	2.8	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluoropentane sulfonic acid (PFPeS)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorooctanoic acid (PFOA)	8	12,000		<9.8	<10	NA	<9.5	NA	NA	**8.7**	<9.6	NA	2.3	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorohexane sulfonic acid (PFHxS)	51	NC		<9.8	<10	NA	2.7	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	NC	NC		<9.8	<10	NA	3	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorononanoic acid (PFNA)	6	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorodecanoic acid (PFDA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorooctane sulfonic acid (PFOS)	16	12		**20**	**21**	NA	**84**	NA	NA	7.3	14	NA	**31**	<9.5	**32**	**22**	6.2	**31**	**19**	**35**	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorooctane Sulfonic Acid - LN (PFOS-LN)	NC	NC		7.4	7.8	NA	47	NA	NA	<10	6.8	NA	11	<9.5	14	9.1	<9.5	15	8.4	17	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorooctane Sulfonic Acid - BR (PFOS-BR)	NC	NC		12	12	NA	35	NA	NA	6.4	6	NA	19	<9.5	16	11	4.2	14	9.1	17	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluoroundecanoic acid (PFUnDA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorononane sulfonic acid (PFNS)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorododecanoic acid (PFDoDA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorodecane sulfonic acid (PFDS)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorotridecanoic acid (PFTrDA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorooctane sulfonamide (FOSA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5
Perfluorotetradecanoic acid (PFTeDA)	NC	NC		<9.8	<10	NA	<9.5	NA	NA	<10	<9.6	NA	<9.9	<9.5	<10	<9.4	<9.5	<10	<10	<9.7	<9.6	<9.6	<10	<9.7	<10	<9.7	<9.5

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	**X**
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed due to turbidity	NA

PFAS criteria based on EGLE proposed drinking water criteria for selected PFAS compounds.

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

				Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe #1	Dupe #2	Field Blank	Trip Blank	Equip Blank	Field Blank
				Date Collected	08/18/2020	08/18/2020	08/18/2020	08/19/2020	08/18/2020	08/18/2020	08/18/2020	08/18/2020	08/19/2020	08/19/2020	08/19/2020	08/19/2020	08/18/2020	08/19/2020	08/19/2020	08/18/2020	08/19/2020	08/18/2020	08/18/2020	08/19/2020	08/19/2020
METALS ANALYTE (ug/L)	**DW**	GSI																		**MW-112S**	**MW-114S**				
Arsenic, Dissolved	10	10			0.57	<2	0.362	**13**	<2	<2	0.934	<2	<0.002	**16**	0.616	0.589	**18**	1.145	**20**	**19**	**21**	<2	NA	<2	<2
Arsenic	10	10			<2	1.019	0.414	**64**	0.339	0.558	0.314	0.258	<0.002	**113**	1.261	0.676	**68**	4	**119**	**70**	**114**	<2	NA	<2	<2
Chromium, Dissolved	100	160	G		0.548	1.225	2.804	0.174	0.474	1.072	1.389	0.14	0.299	0.17	0.393	5	0.389	0.283	0.235	0.281	0.138	0.193	NA	0.095	0.137
Chromium	100	160	G		0.938	2.151	**1170**	0.221	61	24	22	<0.005	0.207	0.282	0.458	7	0.851	1.506	0.457	0.279	0.428	0.164	NA	0.112	0.12
Chromium VI, Dissolved	100	11			<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<10	<10
Chromium VI	100	11			<10	<10	<10	<250	<10	<10	<10	<10	<10	<0.25	<50	<10	<250	<50	<50	<250	<50	<10	NA	<10	<10
Copper, Dissolved	1000	20	G		0.489	<5	1.301	<5	0.707	0.563	0.814	0.478	0.418	<5	<5	<5	<5	<5	1.604	<5	53	0.351	NA	<5	<5
Copper	1000	20	G		0.709	0.596	55	<5	2.148	0.971	1.003	0.417	0.448	<5	<5	0.392	<5	<5	1.803	<5	1.587	0.205	NA	<5	<5
Lead, Dissolved	4	44	G		0.274	<3	<3	<3	<3	<3	<3	<3	<3	<3	0.904	<3	<3	<3	0.369	<3	<3	<3	NA	<3	<3
Lead	4	44	G		0.234	0.409	<3	<3	<3	<3	<3	<3	<3	0.245	<0.003	<3	<3	<3	1.289	<3	1.194	<3	NA	<3	<3
Selenium, Dissolved	50	5			<5	<5	<5	<5	<5	9	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5	<5
Selenium	50	5			<5	<5	<5	<5	<5	10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	<5	<5
Zinc, Dissolved	2400	260	G		3.794	7	6	2.013	9	3.668	3.46	3.679	6	2.365	3.312	3.689	2.558	2.057	8	2.599	7	3.386	NA	2.785	2.769
Zinc	2400	260	G		2.732	2.35	1.075	1.046	1.538	6	1.828	1.729	4.07	1.703	1.381	1.424	1.471	1.634	15	1.117	16	1.264	NA	0.483	0.69
VOC ANALYTE (ug/L)	**DW**	GSI																							
Diethyl ether	10 (E)	ID			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<100	<10	<10	<10	<10
Acetone	730	1,700			<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<500	<50	<500	<50	<50	<50	<50
Methyl iodide	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Carbon disulfide	800	NC			<5	<5	<5	<5	0.11	<5	<5	<5	0.12	0.1	<5	0.1	<5	0.12	<50	<5	<50	0.15	0.19	0.19	0.1
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
Acrylonitrile	2.6	2.0 (M); 1.2			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<20	<2	<2	<2	<2
2-Butanone (MEK)	13,000	2,200			<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<250	<25	<250	<25	<25	<25	<25
Dichlorodifluoromethane	1,700	ID			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
Chloromethane	260	NC			0.25	<5	0.15	0.91	0.17	<5	<5	0.11	0.23	0.22	0.17	0.2	<5	0.31	<50	<5	<50	<5	<5	<5	<5
Vinyl chloride	2	13			<1	<1	<1	0.99	<1	<1	<1	0.94	<1	**11**	<1	<1	**6**	2	**10**	**5**	**10**	<1	<1	<1	<1
Bromomethane	10	4.2; [5(M)]			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
Chloroethane	430	1,100			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
Trichlorofluoromethane	2,600	NA			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,1-Dichloroethene	7	130			<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	1	0.21	<10	1	<10	<1	<1	<1	<1
Methylene chloride	5	1,500			<5	0.12	<5	<5	0.11	<5	<5	0.1	<5	0.12	<5	0.13	0.13	0.12	**10.2**	0.13	**9.9**	0.12	1.23	0.15	<5
trans-1,2-Dichloroethene	100	1,500			<1	<1	<1	<1	<1	<1	<1	<1	<1	0.57	<1	<1	0.19	<1	1.2	0.17	1	<1	<1	<1	<1
1,1-Dichloroethane	880	740			<1	<1	<1	<1	<1	<1	<1	0.29	<1	0.96	<1	<1	0.7	<1	3	0.66	3.1	<1	<1	<1	<1
cis-1,2-Dichloroethene	70	620			3	<1	<1	0.44	<1	<1	<1	1	<1	14	<1	1	2	1	**130**	2	**120**	<1	<1	<1	<1
Tetrahydrofuran	95	11,000			<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	7.6	<90	7.2	<90	0.46	<90	<90
Chloroform	80	350			<1	<1	<1	<1	1	<1	0.23	<1	1	<1	<1	0.11	<1	0.12	<10	<1	<10	<1	<1	<1	<1
Bromochloromethane	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,1,1-Trichloroethane	200	89			<1	<1	<1	<1	<1	<1	<1	<1	<1	0.15	<1	<1	<1	<1	1.9	<1	1.9	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	1800	ID			<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<500	<50	<500	<50	<50	<50	<50
2-Hexanone	1000	ID			<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<500	<50	<500	<50	<50	<50	<50
Carbon tetrachloride	5.0	38	X		<1	<1	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Benzene	5.0	200			<1	<1	<1	0.91	<1	<1	<1	0.14	<1	<1	<1	<1	0.17	<1	<10	0.16	<10	<1	<1	<1	<1
1,2-Dichloroethane	5.0 (A)	360 (X)			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Trichloroethene	5.0	200			**10**	5	0.12	<1	<1	<1	<1	2	0.26	**21**	<1	**8**	4	**30**	**310**	4	**290**	<1	<1	<1	<1
1,2-Dichloropropane	5.0 (A)	230 (X)			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Bromodichloromethane	80.0	NC			<1	<1	<1	<1	0.23	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Dibromomethane	230	NA			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
cis-1,3-Dichloropropene	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Toluene	790	270			<1	<1	<1	0.19	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	0.1	<10	<1	<1	<1	<1
trans-1,3-Dichloropropene	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,1,2-Trichloroethane	5.0 (A)	330 (X)			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Tetrachloroethene	5.0	60			<1	<1	<1	<1	<1	**55**	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
trans-1,4-Dichloro-2-butene	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Dibromochloromethane	80 (A,W)	ID			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
1,2-Dibromoethane	NC	NC			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Chlorobenzene	100	25			<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	77	ID			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe #1	Dupe #2	Field Blank	Trip Blank	Equip Blank	Field Blank
		Date Collected	08/18/2020	08/18/2020	08/18/2020	08/19/2020	08/18/2020	08/18/2020	08/18/2020	08/18/2020	08/19/2020	08/19/2020	08/19/2020	08/19/2020	08/18/2020	08/19/2020	08/19/2020	08/18/2020	08/19/2020	08/18/2020	08/18/2020	08/19/2020	08/19/2020
VOC ANALYTE (ug/L) {cont}	**DW**	GSI																**MW-112S**	**MW-114S**				
Ethylbenzene	74	18	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Total Xylenes	280	49	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
p,m-Xylene			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<20	<2	<2	<2	<2
o-Xylene			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Styrene	100	80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Isopropylbenzene	800	28	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
Bromoform	80 (A,W)	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	8.5	78 (X)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,2,3-Trichloropropane	42	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
n-Propylbenzene	80	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Bromobenzene	18	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,3,5-Trimethylbenzene	72 (E)	45	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
tert-Butylbenzene	80	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,2,4-Trimethylbenzene	63 (E)	17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
sec-Butylbenzene	230	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
p-Isopropyltoluene	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
1,3-Dichlorobenzene	6.6	28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,4-Dichlorobenzene	75	17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,2-Dichlorobenzene	600	13	<1	<1	<1	0.13	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
1,2,3-Trimethylbenzene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
n-Butylbenzene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10	<1	<1	<1	<1
Hexachloroethane	21	6.7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
1,2-Dibromo-3-chloropropane	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
1,2,4-Trichlorobenzene	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
1,2,3-Trichlorobenzene	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	0.1	<5	<5
Naphthalene	520	11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5
2-Methylnaphthalene	260	19	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	0.15	0.15	<5

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

	Sample ID		MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe #1	Dupe #2	Field Blank	Trip Blank	Equip Blank	Field Blank
	Date Collected		08/18/2020	08/18/2020	08/18/2020	08/19/2020	08/18/2020	08/18/2020	08/18/2020	08/18/2020	08/19/2020	08/19/2020	08/19/2020	08/19/2020	08/18/2020	08/19/2020	08/19/2020	08/18/2020	08/19/2020	08/18/2020	08/18/2020	08/19/2020	08/19/2020
PFA ANALYTE (ng/L)	**DW**	GSI																**MW-112S**	**MW-114S**				
Perfluorobutanoic acid (PFBA)	NC	NC	<9.8	<9.7	NA	<10	NA	NA	<10	<10	NA	<10	<10.0	<10	<9.9	<9.7	<9.7	<10	<10	<9.8	<9.9	<9.9	<10
Perfluoropentanoic acid (PFPeA)	NC	NC	<3.9	1.9	NA	<4.0	NA	NA	3.1	<4.1	NA	3.6	1.1	2.4	<4.0	1	1.1	<4.1	1.1	<3.9	<3.9	<3.9	<4.1
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorohexanoic acid (PFHxA)	400,000	NC	<2.0	<1.9	NA	<2.0	NA	NA	3.7	<2.1	NA	3.2	<2.0	1.6	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorobutane sulfonic acid (PFBS)	420	NC	1.6	1.9	NA	<2.0	NA	NA	3.2	<2.1	NA	2.7	1.9	1.5	<2.0	1.8	1.8	1.8	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluoroheptanoic acid (PFHpA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	3	<2.1	NA	1.5	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluoropentane sulfonic acid (PFPeS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorooctanoic acid (PFOA)	8	12,000	<2.0	3.2	NA	<2.0	NA	NA	**11**	<2.1	NA	3.1	2.8	3	<2.0	<1.9	1.8	<2.1	2.1	<2.0	<2.0	<2.0	<2.0
Perfluorohexane sulfonic acid (PFHxS)	51	NC	<2.0	1.9	NA	2.2	NA	NA	3.1	<2.1	NA	2.5	2	1.9	<2.0	3.1	2.3	<2.1	3.1	<2.0	<2.0	<2.0	<2.0
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	NC	NC	<2.0	1.6	NA	2.2	NA	NA	2.3	<2.1	NA	1.8	<2.0	<2.1	<2.0	2.6	1.6	<2.1	2.4	<2.0	<2.0	<2.0	<2.0
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorononanoic acid (PFNA)	6	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorodecanoic acid (PFDA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	NC	NC	<3.9	<3.9	NA	<4.0	NA	NA	<4.0	<4.1	NA	<4.0	<4.0	<4.1	<4.0	<3.9	<3.9	<4.1	<4.1	<3.9	<3.9	<3.9	<4.1
Perfluorooctane sulfonic acid (PFOS)	16	12	**18**	**30**	NA	**120**	NA	NA	7.3	24	NA	**29**	5.9	**33**	**11**	26	**29**	**13**	**36**	<2.0	<2.0	<2.0	<2.0
Perfluorooctane Sulfonic Acid - LN (PFOS-LN)	NC	NC	8.5	12	NA	81	NA	NA	<2.0	15	NA	15	<2.0	17	5.2	5.7	18	5.9	21	<2.0	<2.0	<2.0	<2.0
Perfluorooctane Sulfonic Acid - BR (PFOS-BR)	NC	NC	8.9	18	NA	40	NA	NA	5.8	7.1	NA	13	4.5	15	4.9	19	12	5.8	14	<2.0	<2.0	<2.0	<2.0
Perfluoroundecanoic acid (PFUnDA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorononane sulfonic acid (PFNS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorododecanoic acid (PFDoDA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorodecane sulfonic acid (PFDS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorotridecanoic acid (PFTrDA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorooctane sulfonamide (FOSA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Perfluorotetradecanoic acid (PFTeDA)	NC	NC	<3.9	<3.9	NA	<4.0	NA	NA	<4.0	<4.1	NA	<4.0	<4.0	<4.1	<4.0	<3.9	<3.9	<4.1	<4.1	<3.9	<3.9	<3.9	<4.1

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe #1	Dupe #2	Field Blank	Trip Blank	Equip Blank	Field Blank
Date Collected			08/18/2020	08/18/2020	08/18/2020	08/19/2020	08/18/2020	08/18/2020	08/18/2020	08/18/2020	08/19/2020	08/19/2020	08/19/2020	08/19/2020	08/18/2020	08/19/2020	08/19/2020	08/18/2020	08/19/2020	08/18/2020	08/18/2020	08/19/2020	08/19/2020
PFA ANALYTE (ng/L) {cont}	**DW**	GSI																**MW-112S**	**MW-114S**				
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0
Hexafluoropropylene oxide dimer (HFPO-DA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<2.0	<2.1	NA	<2.0	<2.0	<2.1	<2.0	<1.9	<1.9	<2.1	<2.0	<2.0	<2.0	<2.0	<2.0

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	**X**
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed due to turbidity	NA

PFAS criteria based on EGLE proposed drinking water criteria for selected PFAS compounds.

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID				MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe1	Dupe 2	FB-1	EB-1	FB-2	EB-2	Trip Blank	MW-103S MS	MW-103S MSD
Date Collected				09/14/2021	09/14/2021	09/14/2021	09/16/2021	09/14/2021	09/14/2021	09/14/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/16/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/14/2021	09/14/2021	09/15/2021	09/15/2021	09/16/2021	09/16/2021	09/16/2021
METALS ANALYTE (ug/L)	**DW**	GSI																	MW-112S	MW-114S							
Arsenic, Dissolved	10	10		<2	<0.2	<2	10	<2	0.52	<2	0.5	<2	**52**	1.06	<2	**40**	1.33	**56**	**29**	**61**	<10	<2	<2	<2	NA	236	245
Arsenic	10	10		0.53	6	0.51	**34**	<10	0.78	2	0.26	<2	**73**	1.85	1.77	**71**	6	**166**	**73**	**168**	<10	<2	<2	<2	NA	287	275
Chromium VI, Dissolved	100	11		<10	<10	<10	<10	<10	<10	<10	<10	0.36	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	0.07	<5	NA	205	209
Chromium VI	100	11		<10	<250	8	<250	<10	<10	<10	<10	<10	<50	<50	<10	<5	<50	<50	<50	<50	<10	<10	<5	<10	NA	<202	<204
Chromium, Dissolved	100	160	G	0.46	1.05	<2	<5	0.19	0.76	2.19	0.83	0.35	0.31	1.06	1.98	0.34	0.49	0.22	0.12	0.21	0.2	0.09	0.07	<10	NA	252	245
Chromium	100	160	G	3.58	70	7	0.36	100	35	**5,800**	0.11	0.16	0.27	0.26	15	0.42	3.92	1	0.33	0.78	0.11	0.1	<5	0.09	NA	258	256
Copper, Dissolved	1000	20	G	0.71	1	<5	<5	0.75	<5	519	1.01	1.28	<5	0.59	1.44	<5	0.46	<5	<5	**<5**	<5	<5	0.18	<5	NA	240	241
Copper	1000	20	G	1.73	22	0.45	0.84	2.89	0.56	54	1	1.34	<5	1.86	1.06	0.49	2.18	1.5	0.49	1.6	<5	0.16	<5	<5	NA	248	249
Lead, Dissolved	4	44	G	<3	<3	<3	<3	<3	<3	0.31	0.21	0.24	<5	<3	<3	<3	0.25	<3	<3	<3	<3	<3	<3	<3	NA	250	252
Lead	4	44	G	0.35	**13**	<3	0.21	<3	0.25	0.97	0.31	0.23	<5	0.39	0.38	0.2	1.02	0.75	<3	1.17	<3	<3	<3	<3	NA	248	249
Selenium, Dissolved	50	5		3.79	2.29	<5	<5	2.79	**6**	3.53	2.27	<5	<5	<5	<5	<5	2.69	<5	<5	<5	<5	<5	<5	<5	NA	221	232
Selenium	50	5		2.65	<5	<5	3.31	2.1	4.95	4.53	<5	<5	<5	<5	3.15	<5	<5	<5	<5	<5	<5	<5	<5	<5	NA	252	239
Zinc, Dissolved	2400	260	G	4.11	2.38	6	5	5	4.37	3.11	7	12	3.34	8	3.47	6	6	4.33	4	4.8	1.88	0.77	2.31	12.5	NA	241	223
Zinc	2400	260	G	3.09	59	2.38	7	3.17	2.39	7	4.08	6	2.68	4.69	2.5	3.97	9	7	3.03	6	<5	<5	0.67	0.69	NA	244	245
VOC ANALYTE (ug/L)	**DW**	GSI																									
Acetone	730	1700		<50	<50	<50	<50	<50	<50	<50	1.85	2.6	0.78	2.02	<50	4.13	1.93	21.3	<50	1.94	<50	12.2	11.28	4.06	<50	48.5	47.6
Acrylonitrile	2.6	2.0 (M); 1.2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	58	59
2-Butanone (MEK)	13000	2,200		<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<250	<25	<25	<25	<25	1.45	<25	<25	59	57
Benzene	5	200		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	0.12	<1	<1	<1	<1	<1	<1	55	56
n-Butylbenzene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	54	52
Bromobenzene	18	NA		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	58	57
Bromochloromethane	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	59	59
Bromodichloromethane	80	NC		<1	<1	<1	<1	0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	55	55
Bromoform	80 (A,W)	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	60	59
Bromomethane	10	4.2; [5(M)]		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	52	52
sec-Butylbenzene	230	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	53	53
tert-Butylbenzene	80	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	55	55
Carbon disulfide	800	NC		<5	<5	<5	0.17	<5	<5	<5	0.29	<5	<5	<5	0.12	<5	<5	<50	<5	<5	0.13	0.11	<5	<5	0.16	57	57
Carbon tetrachloride	5	38	X	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	56	56
Chlorobenzene	100	25		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	0.14	<1	<1	<1	<1	<1	<1	56	55
Chloroethane	430	1,100		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	50	50
Chloroform	80	350		<1	<1	<1	<1	1	<1	<1	<1	2	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	55	55
Chloromethane	260	NC		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	45	46
1,1-Dichloroethane	880	740		<1	<1	<1	<1	<1	<1	<1	<1	<1	0.93	<1	<1	0.51	<1	2.4	0.61	3	<1	<1	<1	<1	<1	53	53
1,1-Dichloroethene	7	130		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	0.92	<1	<10	1	1	<1	<1	<1	<1	<1	52	53
1,2-Dibromo-3-chloropropane	NC	NC		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	61	59
1,2-Dibromoethane	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	57	57
1,2-Dichlorobenzene	600	13		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	0.11	<1	<1	<1	<1	<1	<1	54	54
1,2-Dichloroethane	5.0 (A)	360 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	0.16	<1	52	52
1,2-Dichloropropane	5.0 (A)	230 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	54	54
1,3-Dichlorobenzene	6.6	28		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	55	53
1,4-Dichlorobenzene	75	17		<1	<1	<1	<1	<1	<1	<1	0.26	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	54	53
cis-1,2-Dichloroethene	70	620		6	<1	<1	<1	<1	<1	<1	0.57	<1	14	<1	8	2	2	**150**	3	**169**	<1	<1	<1	<1	<1	56	57
cis-1,3-Dichloropropene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	57	57
Dibromochloromethane	80 (A,W)	ID		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	58	57
Dibromomethane	230	NA		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	62	61
Dichlorodifluoromethane	1700	ID		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	45	45
Diethyl ether	10 (E)	ID		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10	<10	<10	<10	56	56
trans-1,2-Dichloroethene	100	1500		<1	<1	<1	<1	<1	<1	<1	<1	<1	0.62	<1	<1	<1	<1	<10	0.18	0.94	<1	<1	<1	<1	<1	54	54
trans-1,3-Dichloropropene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	57	57
trans-1,4-Dichloro-2-butene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	46	41
Ethylbenzene	74	18		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	55	55
2-Hexanone	1000	ID		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<500	<50	<50	<50	<50	<50	<50	<50	60	59
Hexachloroethane	21	6.7		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	58	57
p-Isopropyltoluene	NC	NC		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	55	54
Isopropylbenzene	800	28		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	56	56

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

	Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe1	Dupe 2	FB-1	EB-1	FB-2	EB-2	Trip Blank	MW-103S MS	MW-103S MSD
	Date Collected			09/14/2021	09/14/2021	09/14/2021	09/16/2021	09/14/2021	09/14/2021	09/14/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/16/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/14/2021	09/14/2021	09/15/2021	09/15/2021	09/16/2021	09/16/2021	09/16/2021
VOC ANALYTE (ug/L) {cont}	**DW**	GSI																									
2-Methylnaphthalene	260	19		<5	<5	<5	0.25	<5	0.11	<5	<5	<5	<5	<5	0.15	<5	<5	<50	<5	<5	0.21	0.15	<5	<5	0.25	64	66
4-Methyl-2-pentanone (MIBK)	1800	ID		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	0.31	<50	<500	<50	<50	<50	<50	<50	<50	<50	59	59
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	56	55
Methyl iodide	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	59	60
Methylene chloride	5	1500		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	0.55	<5	<5	<5	0.16	53	55
Naphthalene	520	11		<5	<5	<5	0.13	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	0.1	<5	<5	<5	0.14	62	62
n-Propylbenzene	80	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	55	55
Styrene	100	80		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	57	57
1,1,1,2-Tetrachloroethane	77	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	56	57
1,1,1-Trichloroethane	200	89		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	1	<1	<1	<1	<1	<1	54	55
1,1,2,2-Tetrachloroethane	8.5	78 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	57	56
1,1,2-Trichloroethane	5.0 (A)	330 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	57	57
1,2,3-Trichlorobenzene	NC	NC		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	0.11	61	61
1,2,3-Trichloropropane	42	NA		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	56	57
1,2,3-Trimethylbenzene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	52	52
1,2,4-Trichlorobenzene	NC	NC		<5	<5	<5	0.11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	0.12	59	59
1,2,4-Trimethylbenzene	63 (E)	17		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	58	58
1,3,5-Trimethylbenzene	72 (E)	45		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	58	57
Tetrachloroethene	5	60		<1	<1	<1	<1	<1	**93**	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	59	59
Tetrahydrofuran	95	11000		<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	<900	<90	<90	<90	<90	<90	<90	<90	51.66	52.57
Toluene	790	270		<1	0.11	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	0.11	<1	<1	<1	<1	<1	<1	56	57
Trichloroethene	5	200		**14**	3	0.67	<1	0.24	0.14	0.11	2	0.34	**25**	<1	**16**	4	**29**	**200**	4	**226**	0.11	<1	<1	<1	<1	54	55
Trichlorofluoromethane	2600	NA		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	50	51
Vinyl chloride	2	13		<1	<1	<1	<1	<1	<1	<1	<1	<1	**11**	<1	<1	**4**	1	**9.3**	**4**	**11**	<1	<1	<1	<1	<1	49	49
o-Xylene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	55	55
p,m-Xylene	NC	NC		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2	112	112
Xylenes, Total	280	49		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<30	<3	<3	<3	<3	<3	<3	<3	167	167

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

	Sample ID		MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe1	Dupe 2	FB-1	EB-1	FB-2	EB-2	Trip Blank	MW-103S MS	MW-103S MSD
	Date Collected		09/14/2021	09/14/2021	09/14/2021	09/16/2021	09/14/2021	09/14/2021	09/14/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/16/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/14/2021	09/14/2021	09/15/2021	09/15/2021	09/16/2021	09/16/2021	09/16/2021
PFA ANALYTE (ng/L)	**DW**	GSI																								
Perfluorobutanoic acid (PFBA)	NC	NC	<9.8	<9.7	NA	<16	NA	NA	<9.6	19	NA	<9.8	<10	<9.8	<10	<10	<10	<10	<10	<9.6	<10	<10.0	<9.9	<10	120	110
Perfluoropentanoic acid (PFPeA)	NC	NC	1.1	2.6	NA	<3.9	NA	NA	3.3	<3.9	NA	2.1	1.5	2.9	<4.1	<4.1	<4.0	<4.0	<4.1	<3.8	<4.1	<4.0	<3.9	<4.1	92	88
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	100	93
Perfluorohexanoic acid (PFHxA)	400,000	NC	<2.0	2.1	NA	<2.0	NA	NA	3.8	<1.9	NA	<2.0	<2.1	<2.2	<2.0	<2.1	<2.2	<2.0	<2.4	<1.9	<2.0	<2.0	<2.0	<2.1	97	98
Perfluorobutane sulfonic acid (PFBS)	420	NC	1.6	<1.9	NA	<2.0	NA	NA	3.6	<1.9	NA	1.6	1.7	<2.0	<2.0	1.6	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	94	100
Perfluoroheptanoic acid (PFHpA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	2.1	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	100	93
Perfluoropentane sulfonic acid (PFPeS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	86	88
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC	<3.9	<3.9	NA	<3.9	NA	NA	<3.8	<3.9	NA	<3.9	<4.2	<3.9	<4.1	<4.1	<4.0	<4.0	<4.1	<3.8	<4.1	<4.0	<3.9	<4.1	84	97
Perfluorooctanoic acid (PFOA)	8	12,000	<2.0	5.5	NA	2.7	NA	NA	**17**	<1.9	NA	1.9	2.7	2	<2.0	1.7	1.7	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	99	92
Perfluorohexane sulfonic acid (PFHxS)	51	NC	<2.0	<1.9	NA	5	NA	NA	2.1	<1.9	NA	1.7	<2.1	<2.0	<2.0	1.8	2.5	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	120	100
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	NC	NC	<2.0	<1.9	NA	3.1	NA	NA	1.6	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	1.8	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	97	89
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	17	13
Perfluorononanoic acid (PFNA)	6	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	95	84
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC	<3.9	<3.9	NA	<3.9	NA	NA	<3.8	<3.9	NA	<3.9	<4.2	<3.9	<4.1	<4.1	<4.0	<4.0	<4.1	<3.8	<4.1	<4.0	<3.9	<4.1	95	83
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	2.5	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	86	83
Perfluorodecanoic acid (PFDA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	96	93
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	98	100
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	NC	NC	<3.9	<3.9	NA	<3.9	NA	NA	<3.8	<3.9	NA	<3.9	<4.2	<3.9	<4.1	<4.1	<4.0	<4.0	<4.1	<3.8	<4.1	<4.0	<3.9	<4.1	96	88
Perfluorooctane sulfonic acid (PFOS)	16	12	9.1	**37**	NA	**46**	NA	NA	**18**	6.6	NA	**23**	5.8	11	6.7	**23**	**21**	7.9	**18**	<1.9	<2.0	<2.0	<2.0	<2.1	140	130
Perfluorooctane Sulfonic Acid - LN (PFOS-LN)	NC	NC	5.5	23	NA	24	NA	NA	2.8	4	NA	12	<2.1	6.3	3.5	10	12	3.9	11	<1.9	<2.0	<2.0	<2.0	<2.1	87	82
Perfluorooctane Sulfonic Acid - BR (PFOS-BR)	NC	NC	3.8	13	NA	20	NA	NA	15	2.6	NA	11	4.5	4.5	3.3	13	8.7	4.1	7.4	<1.9	<2.0	<2.0	<2.0	<2.1	49	43
Perfluoroundecanoic acid (PFUnDA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	100	93
Perfluorononane sulfonic acid (PFNS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	92	80
Perfluorododecanoic acid (PFDoDA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	97	92
Perfluorodecane sulfonic acid (PFDS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	100	81
Perfluorotridecanoic acid (PFTrDA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	110	100
Perfluorooctane sulfonamide (FOSA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	97	86
Perfluorotetradecanoic acid (PFTeDA)	NC	NC	<3.9	<3.9	NA	<3.9	NA	NA	<3.8	<3.9	NA	<3.9	<4.2	<3.9	<4.1	<4.1	<4.0	<4.0	<4.1	<3.8	<4.1	<4.0	<3.9	<4.1	84	81

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID			MW-100S	MW-101S	MW-102S	MW-103S	MW-104S	MW-105S	MW-106SR	MW-107S	MW-108S	MW-109S	MW-110S	MW-111S	MW-112S	MW-113S	MW-114S	Dupe1	Dupe 2	FB-1	EB-1	FB-2	EB-2	Trip Blank	MW-103S MS	MW-103S MSD
Date Collected			09/14/2021	09/14/2021	09/14/2021	09/16/2021	09/14/2021	09/14/2021	09/14/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/16/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/15/2021	09/14/2021	09/14/2021	09/15/2021	09/15/2021	09/16/2021	09/16/2021	09/16/2021
PFA ANALYTE (ng/L) {cont}	**DW**	GSI																								
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	110	95
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	100	89
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NC	NC	<2.0	<1.9	NA	<2.0	NA	NA	<1.9	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.0	<1.9	<2.0	<2.0	<2.0	<2.1	100	98
Hexafluoropropylene oxide dimer (HFPO-DA)	NC	NC	<9.8	<9.7	NA	<9.8	NA	NA	<9.6	<9.7	NA	<9.8	<10	<9.8	<10	<10	<10	<10	<10	<9.6	<10	<10.0	<9.9	<10	110	100

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	**X**
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed	NA

PFAS criteria based on EGLE proposed drinking water criteria for selected PFAS compounds.

Table 2
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID				MW-103S	MW-104S	MW-106SR	MW-108S	MW-110S	MW-112S	MW-114S	MW-117S	Dupe1	FB-1	EB-1	Trip Blank	MW-103S MS	MW-103S MSD
Date Collected				03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022
METALS ANALYTE (ug/L)	**DW**	GSI										**MW-114S**					
Arsenic, Dissolved	10	10		8	0.423	0.616	<2	1.91	**32**	**13**	1.131	**11**	0.124	0.364	NA	250	268
Arsenic	10	10		**39**	0.872	1.593	1.122	9	**89**	**52**	0.597	**49**	<2	0.322	NA	298	298
Chromium VI, Dissolved	100	11		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<20	<20
Chromium VI	100	11		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	<20	<20
Chromium, Dissolved	100	160	G	0.238	0.725	0.875	0.298	0.216	0.38	0.215	0.417	0.286	0.229	0.216	NA	245	260
Chromium	100	160	G	0.258	**106**	**2,020**	0.364	2.794	0.368	0.57	12	0.609	0.203	0.075	NA	257	249
Copper, Dissolved	1000	20	G	<5	0.441	1	0.505	<0.005	<0.005	<5	1.321	<5	<5	<5	NA	234	245
Copper	1000	20	G	<5	1.738	**33**	0.628	1.805	<0.005	3.007	2.285	3.227	0.161	<5	NA	246	245
Lead, Dissolved	4	44	G	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	NA	231	248
Lead	4	44	G	<3	<3	1.062	<3	0.99	<3	2.466	<3	2.637	<3	<3	NA	252	243
Manganese, Dissolved	50	4500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	50	4500		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium, Dissolved	50	5		<5	3.52	3.6	3.13	<5	<5	<5	<5	<5	<5	<5	NA	249	271
Selenium	50	5		<5	3.7	3.78	3.16	<5	<5	<5	<5	<5	<5	<5	NA	272	281
Zinc, Dissolved	2400	260	G	1.75	1.968	10	2.015	6	1.144	12	1.719	13	0.44	0.461	NA	249	251
Zinc	2400	260	G	1.72	1.933	31	2.611	8	1.89	37	2.169	23	0.598	0.651	NA	263	262
VOC ANALYTE (ug/L)	**DW**	GSI															
Acetone	730	1700		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	14.6	<50	45	46.7
Acrylonitrile	2.6	2.0 (M); 1.2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	46	49
2-Butanone (MEK)	13000	2,200		<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	48	50
Benzene	5	200		0.54	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	46	43
n-Butylbenzene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	51
Bromobenzene	18	NA		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	49
Bromochloromethane	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	49
Bromodichloromethane	80	NC		<1	0.19	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	50	48
Bromoform	80 (A,W)	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	52
Bromomethane	10	4.2; [5(M)]		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	31	27
sec-Butylbenzene	230	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	52
tert-Butylbenzene	80	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	50	49
Carbon disulfide	800	NC		0.18	0.19	0.24	0.2	0.2	0.23	0.19	0.18	0.2	0.26	0.15	0.26	43	41
Carbon tetrachloride	5	38	X	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	45	43
Chlorobenzene	100	25		0.64	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49	49
Chloroethane	430	1,100		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	29	27
Chloroform	80	350		<1	0.45	<1	0.8	<1	<1	0.14	0.25	0.14	<1	<1	<1	49	47
Chloromethane	260	NC		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	35	34
1,1-Dichloroethane	880	740		<1	<1	<1	<1	<1	0.41	2	<1	2	<1	<1	<1	48	45
1,1-Dichloroethene	7	130		<1	<1	<1	<1	<1	0.38	1	<1	1	<1	<1	<1	43	41
1,2-Dibromo-3-chloropropane	NC	NC		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	76	84
1,2-Dibromoethane	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	53
1,2-Dichlorobenzene	600	13		<1	<1	<1	<1	<1	0.12	<1	<1	<1	<1	<1	<1	52	51
1,2-Dichloroethane	5.0 (A)	360 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	45	42
1,2-Dichloropropane	5.0 (A)	230 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	45	43
1,3-Dichlorobenzene	6.6	28		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	51
1,4-Dichlorobenzene	75	17		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	50

Table 2
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID			MW-103S	MW-104S	MW-106SR	MW-108S	MW-110S	MW-112S	MW-114S	MW-117S	Dupe1	FB-1	EB-1	Trip Blank	MW-103S MS	MW-103S MSD
Date Collected			03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022
VOC ANALYTE (ug/L)	**DW**	GSI														
cis-1,2-Dichloroethene	70	620	0.12	<1	<1	<1	<1	0.88	**131**	0.21	**124**	<1	<1	<1	50	47
cis-1,3-Dichloropropene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	51
Dibromochloromethane	80 (A,W)	ID	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	51	51
Dibromomethane	230	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	53	52
Dichlorodifluoromethane	1700	ID	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	51	52
Diethyl ether	10 (E)	ID	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	41	40
trans-1,2-Dichloroethene	100	1500	<1	<1	<1	<1	<1	0.13	0.75	<1	0.67	<1	<1	<1	46	43
trans-1,3-Dichloropropene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	58	54
trans-1,4-Dichloro-2-butene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	36
Ethylbenzene	74	18	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49	47
2-Hexanone	1000	ID	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	51	54
Hexachloroethane	21	6.7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	53	53
p-Isopropyltoluene	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	52	51
Isopropylbenzene	800	28	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	49	49
VOC ANALYTE (ug/L) {cont}	**DW**	**GSI**														
2-Methylnaphthalene	260	19	0.3	<5	<5	<5	<5	<5	<5	<5	<5	0.11	0.26	<5	73	77
4-Methyl-2-pentanone (MIBK)	1800	ID	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	52	54
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	46	45
Methyl iodide	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	47	44
Methylene chloride	5	1500	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.12	0.22	44	42
Naphthalene	520	11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.12	<5	57	60
n-Propylbenzene	80	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	49
Styrene	100	80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	36	34
1,1,1,2-Tetrachloroethane	77	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	50	48
1,1,1-Trichloroethane	200	89	<1	<1	<1	<1	<1	<1	1	<1	1	<1	<1	<1	46	44
1,1,2,2-Tetrachloroethane	8.5	78 (X)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49	51
1,1,2-Trichloroethane	5.0 (A)	330 (X)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	49
1,2,3-Trichlorobenzene	NC	NC	0.14	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.2	<5	74	74
1,2,3-Trichloropropane	42	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49	50
1,2,3-Trimethylbenzene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	50
1,2,4-Trichlorobenzene	NC	NC	0.17	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.14	<5	74	74
1,2,4-Trimethylbenzene	63 (E)	17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	39	37
1,3,5-Trimethylbenzene	72 (E)	45	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	48	47
Tetrachloroethene	5	60	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	58	56
Tetrahydrofuran	95	11000	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	2.64	2.72	44.86	49.19
Toluene	790	270	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.12	<1	50	48
Trichloroethene	5	200	<1	0.21	<1	0.18	<1	1	**172**	1	**162**	<1	<1	<1	50	47
Trichlorofluoromethane	2600	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	37	36
Vinyl chloride	2	13	0.21	<1	<1	<1	<1	2	**7**	<1	**6**	<1	<1	<1	33	31
o-Xylene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	48	46
p,m-Xylene	NC	NC	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	96	91
Xylenes, Total	280	49	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	144	137

Table 2
Groundwater Analytical Results
RACER - Flint West # 12990

		Sample ID	MW-103S	MW-104S	MW-106SR	MW-108S	MW-110S	MW-112S	MW-114S	MW-117S	Dupe1	FB-1	EB-1	Trip Blank	MW-103S MS	MW-103S MSD
		Date Collected	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022
PFA ANALYTE (ng/L)	**DW**	GSI														
Perfluorobutanoic acid (PFBA)	NC	NC	<39	NA	<9.7	NA	<9.8	<31	<9.8	<10	<10	<10	<10	<11	130	120
Perfluoropentanoic acid (PFPeA)	NC	NC	<3.9	NA	1.2	NA	<3.9	<4.1	<3.9	<4.0	<4.1	<4.0	<4.0	<4.2	120	110
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	100
Perfluorohexanoic acid (PFHxA)	400,000	NC	<2.0	NA	2	NA	<2.0	<2.1	1.7	<2.0	<2.1	<2.0	<2.0	<2.1	110	93
Perfluorobutane sulfonic acid (PFBS)	420	NC	1.6	NA	3.6	NA	2.3	1.5	1.5	<2.0	<2.1	<2.0	<2.0	<2.1	110	100
Perfluoroheptanoic acid (PFHpA)	NC	NC	<2.0	NA	2.2	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	96	99
Perfluoropentane sulfonic acid (PFPeS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	120	100
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	100	110
Perfluorooctanoic acid (PFOA)	8	12,000	2.6	NA	**15**	NA	<2.0	<2.1	2.4	<2.0	<2.1	<2.0	<2.0	<2.1	110	93
Perfluorohexane sulfonic acid (PFHxS)	51	NC	2.1	NA	1.6	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	120	95
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	NC	NC	2.1	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	100	78
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	16	15
Perfluorononanoic acid (PFNA)	6	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	83
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	87	110
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	95
Perfluorodecanoic acid (PFDA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	97	92
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	NC	NC	<3.9	NA	<3.9	NA	<3.9	<4.1	<3.9	<4.0	<4.1	<4.0	<4.0	<4.2	110	95
Perfluorooctane sulfonic acid (PFOS)	16	12	**74**	NA	11	NA	<2.0	10	**16**	<2.0	**13**	<2.0	<2.0	<2.1	160	170
Perfluorooctane Sulfonic Acid - LN (PFOS-LN)	NC	NC	47	NA	3.3	NA	<2.0	4.9	6.8	<2.0	5	<2.0	<2.0	<2.1	110	110
Perfluorooctane Sulfonic Acid - BR (PFOS-BR)	NC	NC	25	NA	7.8	NA	<2.0	5.6	9.6	<2.0	7.6	<2.0	<2.0	<2.1	51	52

Table 2
Groundwater Analytical Results
RACER - Flint West # 12990

Sample ID			MW-103S	MW-104S	MW-106SR	MW-108S	MW-110S	MW-112S	MW-114S	MW-117S	Dupe1	FB-1	EB-1	Trip Blank	MW-103S MS	MW-103S MSD
Date Collected			03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022
PFA ANALYTE (ng/L)	**DW**	GSI														
Perfluoroundecanoic acid (PFUnDA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	100	97
Perfluorononane sulfonic acid (PFNS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
Perfluorododecanoic acid (PFDoDA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	97	97
Perfluorodecane sulfonic acid (PFDS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
Perfluorotridecanoic acid (PFTrDA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	120	110
Perfluorooctane sulfonamide (FOSA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
Perfluorotetradecanoic acid (PFTeDA)	NC	NC	<3.9	NA	<3.9	NA	<3.9	<4.1	<3.9	<4.0	<4.1	<4.0	<4.0	<4.2	130	110
PFA ANALYTE (ng/L) {cont}	**DW**	GSI														
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	100
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	93	83
Hexafluoropropylene oxide dimer (HFPO-DA)	NC	NC	<3.9	NA	<3.9	NA	<3.9	<4.1	<3.9	<4.0	<4.1	<4.0	<4.0	<4.2	98	86

1.64

Table 1
Groundwater Analytical Results
RACER - Flint West # 12990

NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	X
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed	NA

PFAS criteria based on EGLE proposed drinking water criteria for selected PFAS compounds.

Analytical Laboratory Report

Report ID: S33914.01(01)
Generated on 03/24/2022

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S33914.01-S33914.10
Project: RACER Flint West #12990
Collected Date(s): 03/16/2022
Submitted Date/Time: 03/16/2022 15:25
Sampled by: Unknown
P.O. #: 795930

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
N/A	Not Applicable
SM3500-Cr B	Standard Method 3500 Cr B 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003

Analytical Laboratory Report

Sample Summary (10 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S33914.01	FB-1	Water	03/16/22 09:09
S33914.02	MW-104S-31622	Water	03/16/22 09:49
S33914.03	MW-1106SR-31622	Water	03/16/22 10:24
S33914.04	MW-112S-31622	Water	03/16/22 11:03
S33914.05	MW-110S-31622	Water	03/16/22 11:56
S33914.06	MW-108S-31622	Water	03/16/22 12:42
S33914.07	MW-114S-31622	Water	03/16/22 13:04
S33914.08	MW-117-31622	Water	03/16/22 14:16
S33914.09	Dupe1 31622	Water	03/16/22 00:01
S33914.10	Trip Blank	Water	03/16/22 00:01

Analytical Laboratory Report

Lab Sample ID: S33914.01
Sample Tag: FB-1
Collected Date/Time: 03/16/2022 09:09
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:08, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 16:44, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 11:26, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	Not detected	0.002	0.000102	mg/L	2	7440-38-2	
Chromium	0.000203	0.005	0.0000386	mg/L	2	7440-47-3	b
Copper	0.000161	0.005	0.000150	mg/L	2	7440-50-8	b
Lead	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	
Selenium	Not detected	0.005	0.000838	mg/L	2	7782-49-2	
Zinc	0.000598	0.005	0.000292	mg/L	2	7440-66-6	b

Method: E200.8, Run Date: 03/24/22 11:27, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.000124	0.002	0.000102	mg/L	2	7440-38-2	bf
Chromium, Dissolved	0.000229	0.005	0.0000386	mg/L	2	7440-47-3	bf
Copper, Dissolved	Not detected	0.005	0.000150	mg/L	2	7440-50-8	f
Lead, Dissolved	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	f
Selenium, Dissolved	Not detected	0.005	0.000838	mg/L	2	7782-49-2	f
Zinc, Dissolved	0.000440	0.005	0.000292	mg/L	2	7440-66-6	bf

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 20:27, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.01 (continued)
Sample Tag: FB-1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 20:27, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.26	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	Not detected	1	0.10	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.01 (continued)
Sample Tag: FB-1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 20:27, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	0.11	5	0.10	ug/L	1	91-57-6	JB

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Analytical Laboratory Report

Lab Sample ID: S33914.02
Sample Tag: MW-104S-31622
Collected Date/Time: 03/16/2022 09:49
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:17, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 16:46, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 11:33, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.000872	0.002	0.000255	mg/L	5	7440-38-2	b
Chromium	0.106	0.005	0.0000965	mg/L	5	7440-47-3	
Copper	0.001738	0.005	0.000377	mg/L	5	7440-50-8	b
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Selenium	0.00370	0.005	0.00209	mg/L	5	7782-49-2	b
Zinc	0.001933	0.005	0.000730	mg/L	5	7440-66-6	b

Method: E200.8, Run Date: 03/24/22 11:37, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.000423	0.002	0.000255	mg/L	5	7440-38-2	bf
Chromium, Dissolved	0.000725	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	0.000441	0.005	0.000377	mg/L	5	7440-50-8	bf
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	0.00352	0.005	0.00209	mg/L	5	7782-49-2	bf
Zinc, Dissolved	0.001968	0.005	0.000730	mg/L	5	7440-66-6	bf

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 22:23, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.02 (continued)
Sample Tag: MW-104S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 22:23, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.19	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	0.45	1	0.10	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	0.21	1	0.10	ug/L	1	79-01-6	J
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	0.19	1	0.10	ug/L	1	75-27-4	J
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.02 (continued)

Sample Tag: MW-104S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 22:23, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

Lab Sample ID: S33914.03
Sample Tag: MW-1106SR-31622
Collected Date/Time: 03/16/2022 10:24
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:19, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 16:48, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 11:42, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.001593	0.002	0.000255	mg/L	5	7440-38-2	b
Chromium	2.02	0.005	0.0000965	mg/L	5	7440-47-3	
Copper	0.033	0.005	0.000377	mg/L	5	7440-50-8	
Lead	0.001062	0.003	0.000190	mg/L	5	7439-92-1	b
Selenium	0.00378	0.005	0.00209	mg/L	5	7782-49-2	b
Zinc	0.031	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 03/24/22 11:44, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.000616	0.002	0.000255	mg/L	5	7440-38-2	bf
Chromium, Dissolved	0.000875	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	0.000781	0.005	0.000377	mg/L	5	7440-50-8	bf
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	0.00360	0.005	0.00209	mg/L	5	7782-49-2	bf
Zinc, Dissolved	0.010	0.005	0.000730	mg/L	5	7440-66-6	f

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 22:42, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.03 (continued)
Sample Tag: MW-1106SR-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 22:42, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.24	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	Not detected	1	0.10	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.03 (continued)
Sample Tag: MW-1106SR-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 22:42, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

Analytical Laboratory Report

Lab Sample ID: S33914.04
Sample Tag: MW-112S-31622
Collected Date/Time: 03/16/2022 11:03
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:21, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 16:51, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 11:46, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.089	0.002	0.000255	mg/L	5	7440-38-2	
Chromium	0.000368	0.005	0.0000965	mg/L	5	7440-47-3	b
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Zinc	0.001890	0.005	0.000730	mg/L	5	7440-66-6	b

Method: E200.8, Run Date: 03/24/22 11:55, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.032	0.002	0.000255	mg/L	5	7440-38-2	f
Chromium, Dissolved	0.000380	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	Not detected	0.005	0.000377	mg/L	5	7440-50-8	f
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	Not detected	0.005	0.00209	mg/L	5	7782-49-2	f
Zinc, Dissolved	0.001144	0.005	0.000730	mg/L	5	7440-66-6	bf

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:01, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.04 (continued)
Sample Tag: MW-112S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:01, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.23	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	2	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	0.38	1	0.10	ug/L	1	75-35-4	J
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	0.13	1	0.10	ug/L	1	156-60-5	J
1,1-Dichloroethane	0.41	1	0.10	ug/L	1	75-34-3	J
cis-1,2-Dichloroethene	0.88	1	0.10	ug/L	1	156-59-2	J
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	Not detected	1	0.10	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	1	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.04 (continued)
Sample Tag: MW-112S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:01, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	0.12	1	0.10	ug/L	1	95-50-1	J
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

J-Estimated value less than reporting limit, but greater than MDL

Analytical Laboratory Report

Lab Sample ID: S33914.05
Sample Tag: MW-110S-31622
Collected Date/Time: 03/16/2022 11:56
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:26, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 16:55, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 11:59, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.009	0.002	0.000255	mg/L	5	7440-38-2	
Chromium	0.002794	0.005	0.0000965	mg/L	5	7440-47-3	b
Copper	0.001805	0.005	0.000377	mg/L	5	7440-50-8	b
Lead	0.000990	0.003	0.000190	mg/L	5	7439-92-1	b
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Zinc	0.008	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 03/24/22 12:01, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.00191	0.002	0.000255	mg/L	5	7440-38-2	bf
Chromium, Dissolved	0.000216	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	Not detected	0.005	0.000377	mg/L	5	7440-50-8	f
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	Not detected	0.005	0.00209	mg/L	5	7782-49-2	f
Zinc, Dissolved	0.006	0.005	0.000730	mg/L	5	7440-66-6	f

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:21, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.05 (continued)
Sample Tag: MW-110S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:21, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.20	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	Not detected	1	0.10	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.05 (continued)

Sample Tag: MW-110S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:21, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

Analytical Laboratory Report

Lab Sample ID: S33914.06
Sample Tag: MW-108S-31622
Collected Date/Time: 03/16/2022 12:42
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:28, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 16:58, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 12:13, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.001122	0.002	0.000255	mg/L	5	7440-38-2	b
Chromium	0.000364	0.005	0.0000965	mg/L	5	7440-47-3	b
Copper	0.000628	0.005	0.000377	mg/L	5	7440-50-8	b
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Selenium	0.00316	0.005	0.00209	mg/L	5	7782-49-2	b
Zinc	0.002611	0.005	0.000730	mg/L	5	7440-66-6	b

Method: E200.8, Run Date: 03/24/22 12:19, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	Not detected	0.002	0.000255	mg/L	5	7440-38-2	f
Chromium, Dissolved	0.000298	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	0.000505	0.005	0.000377	mg/L	5	7440-50-8	bf
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	0.00313	0.005	0.00209	mg/L	5	7782-49-2	bf
Zinc, Dissolved	0.002015	0.005	0.000730	mg/L	5	7440-66-6	bf

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:40, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.06 (continued)
Sample Tag: MW-108S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:40, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.20	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	0.80	1	0.10	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	2	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	0.18	1	0.10	ug/L	1	79-01-6	J
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.06 (continued)

Sample Tag: MW-108S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:40, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

Analytical Laboratory Report

Lab Sample ID: S33914.07
Sample Tag: MW-114S-31622
Collected Date/Time: 03/16/2022 13:04
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:31, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 17:00, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 12:21, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.052	0.002	0.000255	mg/L	5	7440-38-2	
Chromium	0.000570	0.005	0.0000965	mg/L	5	7440-47-3	b
Copper	0.003007	0.005	0.000377	mg/L	5	7440-50-8	b
Lead	0.002466	0.003	0.000190	mg/L	5	7439-92-1	b
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Zinc	0.037	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 03/24/22 12:25, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.013	0.002	0.000255	mg/L	5	7440-38-2	f
Chromium, Dissolved	0.000215	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	Not detected	0.005	0.000377	mg/L	5	7440-50-8	f
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	Not detected	0.005	0.00209	mg/L	5	7782-49-2	f
Zinc, Dissolved	0.012	0.005	0.000730	mg/L	5	7440-66-6	f

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:59, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.07 (continued)
Sample Tag: MW-114S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:59, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.19	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	7	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	1	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	0.75	1	0.10	ug/L	1	156-60-5	J
1,1-Dichloroethane	2	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	131	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	0.14	1	0.10	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	1	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	172	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.07 (continued)
Sample Tag: MW-114S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 23:59, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

Analytical Laboratory Report

Lab Sample ID: S33914.08
Sample Tag: MW-117-31622
Collected Date/Time: 03/16/2022 14:16
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:46, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 17:04, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 12:27, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.000597	0.002	0.000255	mg/L	5	7440-38-2	b
Chromium	0.012	0.005	0.0000965	mg/L	5	7440-47-3	
Copper	0.002285	0.005	0.000377	mg/L	5	7440-50-8	b
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Zinc	0.002169	0.005	0.000730	mg/L	5	7440-66-6	b

Method: E200.8, Run Date: 03/24/22 12:30, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.001131	0.002	0.000255	mg/L	5	7440-38-2	bf
Chromium, Dissolved	0.000417	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	0.001321	0.005	0.000377	mg/L	5	7440-50-8	bf
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	Not detected	0.005	0.00209	mg/L	5	7782-49-2	f
Zinc, Dissolved	0.001719	0.005	0.000730	mg/L	5	7440-66-6	bf

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/19/22 00:18, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.08 (continued)
Sample Tag: MW-117-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/19/22 00:18, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.18	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	0.21	1	0.10	ug/L	1	156-59-2	J
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	0.25	1	0.10	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	1	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.08 (continued)
Sample Tag: MW-117-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/19/22 00:18, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

Analytical Laboratory Report

Lab Sample ID: S33914.09
Sample Tag: Dupe1 31622
Collected Date/Time: 03/16/2022 00:01
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	2.8	IR
3	40ml Glass	HCL	Yes	2.8	IR
1	125ml Plastic	HNO3	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/16/22 17:37, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/16/22 17:06, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 12:33, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.049	0.002	0.000255	mg/L	5	7440-38-2	
Chromium	0.000609	0.005	0.0000965	mg/L	5	7440-47-3	b
Copper	0.003227	0.005	0.000377	mg/L	5	7440-50-8	b
Lead	0.002637	0.003	0.000190	mg/L	5	7439-92-1	b
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Zinc	0.023	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 03/24/22 12:36, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.011	0.002	0.000255	mg/L	5	7440-38-2	f
Chromium, Dissolved	0.000286	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	Not detected	0.005	0.000377	mg/L	5	7440-50-8	f
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	Not detected	0.005	0.00209	mg/L	5	7782-49-2	f
Zinc, Dissolved	0.013	0.005	0.000730	mg/L	5	7440-66-6	f

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/19/22 00:38, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab

Lab Sample ID: S33914.09 (continued)
Sample Tag: Dupe1 31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/19/22 00:38, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.20	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	6	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	1	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	0.67	1	0.10	ug/L	1	156-60-5	J
1,1-Dichloroethane	2	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	124	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	0.14	1	0.10	ug/L	1	67-66-3	J
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	1	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	162	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.09 (continued)

Sample Tag: Dupe1 31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/19/22 00:38, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

Analytical Laboratory Report

Lab Sample ID: S33914.10
Sample Tag: Trip Blank
Collected Date/Time: 03/16/2022 00:01
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/21/22 11:00	BML	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 20:07, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.26	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	0.22	5	0.10	ug/L	1	75-09-2	J
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	2.72	90	0.20	ug/L	1	109-99-9	JB
Chloroform	Not detected	1	0.10	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33914.10 (continued)
Sample Tag: Trip Blank

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/18/22 20:07, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5	0.10	ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5	0.040	ug/L	1	87-61-6	
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5	0.10	ug/L	1	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID: S33914
Client: APPLIED (Applied Ecosystems)
Project: RACER Flint West #12990
Submitted: 03/16/2022 15:25 Login User: PFD

Attention: Rodney Abke
Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.8
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[X] Yes	[ ] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[X] Yes	[ ] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[X] No	[ ] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S33914 Submitted: 03/16/2022 15:25

Client: APPLIED (Applied Ecosystems)

Project: RACER Flint West #12990

Initial Preservation Check: 03/16/2022 15:46 PFD

Preservation Recheck (E200.8): N/A

Attention: Rodney Abke
Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S33914.01	125ml Plastic HNO3	<2			
S33914.02	125ml Plastic HNO3	<2			
S33914.03	125ml Plastic HNO3	<2			
S33914.04	125ml Plastic HNO3	<2			
S33914.05	125ml Plastic HNO3	<2			
S33914.06	125ml Plastic HNO3	<2			
S33914.07	125ml Plastic HNO3	<2			
S33914.08	125ml Plastic HNO3	<2			
S33914.09	125ml Plastic HNO3	<2			

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # _____ OF _____

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Rodney Abke
COMPANY: Applied EcoSystems
ADDRESS: G-4300 South Saginaw Street
CITY: Burton STATE: MI ZIP CODE: 48529
PHONE NO.: 810-715-2525 FAX NO.: 810-715-2526 P.O. NO.: PO795930
E-MAIL ADDRESS: rabke@appliedecosystems.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Monica Wallingford ☐SAME
COMPANY: Revitalizing Auto Communities Environmental Response (RACER) Trust
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: 313.486.2978 E-MAIL ADDRESS: mwallingford@racertrust.org

PROJECT NO./NAME: RACER Flint West #12990 SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐1 DAY ☐2 DAYS ☐3 DAYS ☒STANDARD ☐OTHER _____

DELIVERABLES REQUIRED ☐STD ☒LEVEL II ☐LEVEL III ☐LEVEL IV ☐EDD ☒OTHER report to MDLs

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications: ☐OHIO VAP ☐Drinking Water ☐DoD ☐NPDES
Project Locations: ☐Detroit ☐New York ☐Other _____
Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	VOCs	Metals, dissolved*	Metals, Total*	Special Instructions
33914.01	3-16	9:09	FB-1	W	6	X	X	X					X	X	X	* - Metals list incldues:
.02	3-16	~~10:21~~	9:49 MW-104S-31622	W	6	X	X	X					X	X	X	Ar, Cr-total, CR-Hex, Cu
.03	3-16	10:24	MW-106SR-31622	W	5		X	X					X		X	Pb, Se, Zn
.03-~~04~~	3-16	10:34	MW-106SR-31622	W	1	X								X		
.04-~~05~~	3-16	11:05	MW-112S-31622	W	6	X	X	X					X	X	X	report down to MCLs
.05-~~06~~	3-16	11:56	MW-103-31622	W	6	X	X	X					X	X	X	
.06-~~07~~	3-16	12:42	MW-108S-31622	W	6	X	X	X					X	X	X	
.07-~~08~~	3-16	13:01	MW-114S-31622	W	6	X	X	X					X	X	X	
.08-~~09~~ PD	3-16	14:16	MW-117-31622	W	6	X	X	X					X	X	X	
.09-~~10~~	3-16	—	Dup-131622	W	6	X	X	X					X	X	X	

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Joshua Hendrickson/AE ☐Sampler DATE: 3-16-22 TIME: 18:20
RECEIVED BY: SIGNATURE/ORGANIZATION: AE DATE: 3.16.22 TIME: 14:20
RELINQUISHED BY: SIGNATURE/ORGANIZATION: AE DATE: 3-16-22 TIME: 21:35
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 3/16/22 TIME: 1435

RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: 3/16/22 TIME: 1335
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 3/16/22 TIME: 1525

SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS
SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS

NOTES: TEMP. ON ARRIVAL: 2.8

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Analytical Laboratory Report

Report ID: S33923.01(01)
Generated on 04/06/2022

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S33923.01-S33923.08
Project: RACER Flint West #12990
Collected Date(s): 03/16/2022
Submitted Date/Time: 03/16/2022 15:25
Sampled by: Unkown
P.O. #: 795930

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein, acrylonitrile, and 2-chlorovinylethyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)

Parameter Summary

Parameter	Synonym	Cas #
PFBA	Perfluorobutanoic Acid	375-22-4
PFPeA	Perfluoropentanoic Acid	2706-90-3
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR
PFNA	Perfluorononanoic Acid	375-95-1
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8
PFDA	Perfluorodecanoic Acid	335-76-2
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFNS	Perfluorononane Sulfonic Acid	68259-12-1
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFDS	Perfluorodecane Sulfonic Acid	335-77-3
PFTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6

Analytical Laboratory Report

Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S33923.01	FB-1	Water	03/16/22 09:09
S33923.02	MW-106SR-31622	Water	03/16/22 10:24
S33923.03	MW-112S-31622	Water	03/16/22 11:03
S33923.04	MW-110S-31622	Water	03/16/22 11:56
S33923.05	MW-114S-31622	Water	03/16/22 13:24
S33923.06	MW-117S-31622	Water	03/16/22 14:16
S33923.07	DUP-01	Water	03/16/22 00:01
S33923.08	Trizma FB	Water	03/16/22 00:01

Analytical Laboratory Report

Lab Sample ID: S33923.01
Sample Tag: FB-1
Collected Date/Time: 03/16/2022 09:09
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.42/6.92/9	ASTMD7979-19M	03/21/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/23/22 14:23, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2	2991-50-6	
PFOS*	Not detected	2.0	2.0	ng/L	2	1763-23-1	
PFOS-LN*	Not detected	2.0	2.0	ng/L	2	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	2	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	2	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2	919005-14-4	
HFPO-DA*	Not detected	4.0	2.0	ng/L	2	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S33923.02
Sample Tag: MW-106SR-31622
Collected Date/Time: 03/16/2022 10:24
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.72/7.05/11	ASTMD7979-19M	03/21/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/23/22 14:43, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.7	9.7	ng/L	1.94	375-22-4	
PFPeA*	1.2	3.9	0.97	ng/L	1.94	2706-90-3	J
4:2 FTSA*	Not detected	1.9	1.6	ng/L	1.94	757124-72-4	
PFHxA*	2.0	1.9	1.4	ng/L	1.94	307-24-4	
PFBS*	3.6	1.9	1.4	ng/L	1.94	375-73-5	
PFHpA*	2.2	1.9	1.4	ng/L	1.94	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.94	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.94	27619-97-2	
PFOA*	15	1.9	1.6	ng/L	1.94	335-67-1	
PFHxS*	1.6	1.9	1.6	ng/L	1.94	355-46-4	J
PFHxS-LN*	Not detected	1.9	1.6	ng/L	1.94	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.6	ng/L	1.94	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.94	375-95-1	
8:2 FTSA*	Not detected	1.9	0.97	ng/L	1.94	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.94	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.94	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.94	2355-31-9	
EtFOSAA*	Not detected	3.9	1.9	ng/L	1.94	2991-50-6	
PFOS*	11	1.9	1.9	ng/L	1.94	1763-23-1	
PFOS-LN*	3.3	1.9	1.9	ng/L	1.94	1763-23-1-LN	
PFOS-BR*	7.8	1.9	1.9	ng/L	1.94	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.4	ng/L	1.94	2058-94-8	
PFNS*	Not detected	1.9	1.4	ng/L	1.94	68259-12-1	
PFDoDA*	Not detected	1.9	1.6	ng/L	1.94	307-55-1	
PFDS*	Not detected	1.9	1.4	ng/L	1.94	335-77-3	
PFTrDA*	Not detected	1.9	1.2	ng/L	1.94	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.94	754-91-6	
PFTeDA*	Not detected	3.9	1.7	ng/L	1.94	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.94	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.4	ng/L	1.94	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.94	919005-14-4	
HFPO-DA*	Not detected	3.9	1.9	ng/L	1.94	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL

Analytical Laboratory Report

Lab Sample ID: S33923.03
Sample Tag: MW-112S-31622
Collected Date/Time: 03/16/2022 11:03
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.29/6.95/11	ASTMD7979-19M	03/21/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/24/22 13:42, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	31	10	ng/L	2.06	375-22-4	X
PFPeA*	Not detected	4.1	1.0	ng/L	2.06	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.06	757124-72-4	I
PFHxA*	Not detected	2.1	1.4	ng/L	2.06	307-24-4	
PFBS*	1.5	2.1	1.4	ng/L	2.06	375-73-5	J
PFHpA*	Not detected	2.1	1.4	ng/L	2.06	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.06	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.06	27619-97-2	I
PFOA*	Not detected	2.1	1.6	ng/L	2.06	335-67-1	
PFHxS*	Not detected	2.1	1.6	ng/L	2.06	355-46-4	
PFHxS-LN*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.06	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.06	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.06	39108-34-4	I
PFHpS*	Not detected	2.1	2.1	ng/L	2.06	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.06	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.06	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.06	2991-50-6	
PFOS*	10	2.1	2.0	ng/L	2.06	1763-23-1	
PFOS-LN*	4.9	2.1	2.0	ng/L	2.06	1763-23-1-LN	
PFOS-BR*	5.6	2.1	2.0	ng/L	2.06	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.06	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.06	68259-12-1	
PFDoDA*	Not detected	2.1	1.6	ng/L	2.06	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.06	335-77-3	
PFTrDA*	Not detected	2.1	1.2	ng/L	2.06	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.06	754-91-6	
PFTeDA*	Not detected	4.1	1.9	ng/L	2.06	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.06	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.06	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.06	919005-14-4	
HFPO-DA*	Not detected	4.1	2.1	ng/L	2.06	13252-13-6	

X-Elevated reporting limit due to matrix interference
I-Matrix interference with internal standard
J-Estimated value less than reporting limit, but greater than MDL

Analytical Laboratory Report

Lab Sample ID: S33923.04
Sample Tag: MW-110S-31622
Collected Date/Time: 03/16/2022 11:56
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.60/7.00/11	ASTMD7979-19M	03/21/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/23/22 15:22, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	2.3	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	3.9	2.0	ng/L	1.96	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S33923.05
Sample Tag: MW-114S-31622
Collected Date/Time: 03/16/2022 13:24
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.58/6.98/11	ASTMD7979-19M	03/21/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/23/22 15:41, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	1.7	2.0	1.4	ng/L	1.96	307-24-4	J
PFBS*	1.5	2.0	1.4	ng/L	1.96	375-73-5	J
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	2.4	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	16	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	6.8	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	9.6	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	3.9	2.0	ng/L	1.96	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL

Analytical Laboratory Report

Lab Sample ID: S33923.06
Sample Tag: MW-117S-31622
Collected Date/Time: 03/16/2022 14:16
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.41/6.97/11	ASTMD7979-19M	03/21/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/23/22 16:01, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.02	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2.02	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2.02	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2.02	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2.02	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2.02	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2.02	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2.02	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2.02	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2.02	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2.02	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2.02	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2.02	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2.02	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2.02	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2.02	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2.02	2991-50-6	
PFOS*	Not detected	2.0	2.0	ng/L	2.02	1763-23-1	
PFOS-LN*	Not detected	2.0	2.0	ng/L	2.02	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2.02	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2.02	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2.02	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	2.02	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2.02	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	2.02	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2.02	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2.02	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2.02	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2.02	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2.02	919005-14-4	
HFPO-DA*	Not detected	4.0	2.0	ng/L	2.02	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S33923.07
Sample Tag: DUP-01
Collected Date/Time: 03/16/2022 00:01
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.84/6.98/12	ASTMD7979-19M	03/21/22 16:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/23/22 16:20, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.05	375-22-4	
PFPeA*	Not detected	4.1	1.0	ng/L	2.05	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.6	ng/L	2.05	757124-72-4	
PFHxA*	Not detected	2.1	1.4	ng/L	2.05	307-24-4	
PFBS*	Not detected	2.1	1.4	ng/L	2.05	375-73-5	
PFHpA*	Not detected	2.1	1.4	ng/L	2.05	375-85-9	
PFPeS*	Not detected	2.1	1.8	ng/L	2.05	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.05	27619-97-2	
PFOA*	Not detected	2.1	1.6	ng/L	2.05	335-67-1	
PFHxS*	Not detected	2.1	1.6	ng/L	2.05	355-46-4	
PFHxS-LN*	Not detected	2.1	1.6	ng/L	2.05	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.6	ng/L	2.05	355-46-4-BR	
PFNA*	Not detected	2.1	1.8	ng/L	2.05	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.05	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.05	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.05	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.05	2355-31-9	
EtFOSAA*	Not detected	4.1	2.1	ng/L	2.05	2991-50-6	
PFOS*	13	2.1	2.0	ng/L	2.05	1763-23-1	
PFOS-LN*	5.0	2.1	2.0	ng/L	2.05	1763-23-1-LN	
PFOS-BR*	7.6	2.1	2.0	ng/L	2.05	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.4	ng/L	2.05	2058-94-8	
PFNS*	Not detected	2.1	1.4	ng/L	2.05	68259-12-1	
PFDoDA*	Not detected	2.1	1.6	ng/L	2.05	307-55-1	
PFDS*	Not detected	2.1	1.4	ng/L	2.05	335-77-3	
PFTrDA*	Not detected	2.1	1.2	ng/L	2.05	72629-94-8	
FOSA*	Not detected	2.1	1.8	ng/L	2.05	754-91-6	
PFTeDA*	Not detected	4.1	1.8	ng/L	2.05	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.8	ng/L	2.05	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.4	ng/L	2.05	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.05	919005-14-4	
HFPO-DA*	Not detected	4.1	2.1	ng/L	2.05	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S33923.08
Sample Tag: Trizma FB
Collected Date/Time: 03/16/2022 00:01
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	Trizma	Yes	2.8	IR

Other / Misc.

Method: , Run Date: 03/23/22 09:14, Analyst: JRM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		

Merit Laboratories Login Checklist

Lab Set ID: S33923
Client: APPLIED (Applied Ecosystems)
Project: RACER Flint West #12990
Submitted: 03/16/2022 15:25 Login User: PFD

Attention: Rodney Abke
Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.8
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[ ] Yes	[ ] No	[X] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # ____ OF ____

CHAIN OF CUSTODY RECORD

REPORT TO	
CONTACT NAME	Rodney Abke
COMPANY	Applied EcoSystems
ADDRESS	G-4300 South Saginaw Street
CITY	Burton
STATE	MI
ZIP CODE	48529
PHONE NO.	810-715-2525
FAX NO.	810-715-2526
P.O. NO.	PO795930
E-MAIL ADDRESS	rabke@appliedecosystems.com
QUOTE NO.	

INVOICE TO	
CONTACT NAME	Monica Wallingford
SAME	☐
COMPANY	Revitalizing Auto Communities Environmental Response (RACER) Trust
ADDRESS	
CITY	
STATE	
ZIP CODE	
PHONE NO.	313.486.2978
E-MAIL ADDRESS	mwallingford@racertrust.org

PROJECT NO./NAME RACER Flint West #12990

SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER ______

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☒ OTHER report to MDLs

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS/PFOS **	Special Instructions
339230.01	3-16	9:09	FB-1	W	1	X							X	**- 28 Compound List
.02	3-16	10:24	mw-106SE-~~B32~~ 31622	W	3	X							X	
.03	3-16	11:03	mw-112S-31622	W	3	X							X	report down to MDLs
.04	3-16	11:54	mw-110S-31622	W	3	X							X	
.05	3-16	13:24	mw-114S-31622	W	3	X							X	
.06	3-16	14:16	mw-117S-31622	W	3	X							X	

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other ______

	SIGNATURE/ORGANIZATION	DATE	TIME
RELINQUISHED BY: ☒ Sampler	[signature]	3-16	14:20
RECEIVED BY:	[signature]	3-16-22	14:20
RELINQUISHED BY:	[signature]	3-16-22	14:35
RECEIVED BY:	[signature]	3/16/22	14:35
RELINQUISHED BY:	[signature]	3/16/22	1525
RECEIVED BY:	[signature]	3/16/22	1525

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES:

TEMP. ON ARRIVAL 2.8

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Analytical Laboratory Report

Report ID: S33939.01(01)
Generated on 04/07/2022

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S33939.01-S33939.05
Project: RACER Flint West #12990
Collected Date(s): 03/16/2022
Submitted Date/Time: 03/17/2022 12:20
Sampled by: Unknown
P.O. #: 795930

Table of Contents

Maya Murshak
Technical Director

Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein, acrylonitrile, and 2-chlorovinylethyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)

Parameter Summary

Parameter	Synonym	Cas #
PFBA	Perfluorobutanoic Acid	375-22-4
PFPeA	Perfluoropentanoic Acid	2706-90-3
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR
PFNA	Perfluorononanoic Acid	375-95-1
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8
PFDA	Perfluorodecanoic Acid	335-76-2
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFNS	Perfluorononane Sulfonic Acid	68259-12-1
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFDS	Perfluorodecane Sulfonic Acid	335-77-3
PFTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6

Sample Summary (5 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S33939.01	MW-103S-31622	Water	03/16/22 15:25
S33939.02	MS MW-103S-31622	Water	03/16/22 15:25
S33939.03	MSD MW-103S-31622	Water	03/16/22 15:25
S33939.04	EB-1-31622	Water	03/16/22 15:53
S33939.05	Trip Blank	Water	03/16/22 00:01

Analytical Laboratory Report

Lab Sample ID: S33939.01
Sample Tag: MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140627

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.56/6.99/11	ASTMD7979-19M	03/23/22 14:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/24/22 15:40, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	39	9.9	ng/L	1.97	375-22-4	X
PFPeA*	Not detected	3.9	0.99	ng/L	1.97	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.97	757124-72-4	I
PFHxA*	Not detected	2.0	1.4	ng/L	1.97	307-24-4	
PFBS*	1.6	2.0	1.4	ng/L	1.97	375-73-5	J
PFHpA*	Not detected	2.0	1.4	ng/L	1.97	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.97	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.97	27619-97-2	I
PFOA*	2.6	2.0	1.6	ng/L	1.97	335-67-1	
PFHxS*	2.1	2.0	1.6	ng/L	1.97	355-46-4	
PFHxS-LN*	2.1	2.0	1.6	ng/L	1.97	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.97	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.97	39108-34-4	I
PFHpS*	Not detected	2.0	2.0	ng/L	1.97	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.97	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.97	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.97	2991-50-6	
PFOS*	74	2.0	1.9	ng/L	1.97	1763-23-1	
PFOS-LN*	47	2.0	1.9	ng/L	1.97	1763-23-1-LN	
PFOS-BR*	25	2.0	1.9	ng/L	1.97	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.97	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.97	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.97	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.97	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	1.97	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.97	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.97	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.97	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.97	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.97	919005-14-4	
HFPO-DA*	Not detected	3.9	2.0	ng/L	1.97	13252-13-6	

X-Elevated reporting limit due to matrix interference
I-Matrix interference with internal standard
J-Estimated value less than reporting limit, but greater than MDL

Analytical Laboratory Report

Lab Sample ID: S33939.02
Sample Tag: MS MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140627

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.31/7.00/11	ASTMD7979-19M	03/23/22 14:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/25/22 09:31, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	130	10	10	ng/L	2.07	375-22-4	1
PFPeA*	120	4.1	1.0	ng/L	2.07	2706-90-3	1
4:2 FTSA*	110	2.1	1.7	ng/L	2.07	757124-72-4	1
PFHxA*	110	2.1	1.4	ng/L	2.07	307-24-4	1
PFBS*	110	2.1	1.4	ng/L	2.07	375-73-5	1
PFHpA*	96	2.1	1.4	ng/L	2.07	375-85-9	1
PFPeS*	120	2.1	1.9	ng/L	2.07	2706-91-4	1
6:2 FTSA*	100	2.1	2.1	ng/L	2.07	27619-97-2	1
PFOA*	110	2.1	1.7	ng/L	2.07	335-67-1	1
PFHxS*	120	2.1	1.7	ng/L	2.07	355-46-4	1
PFHxS-LN*	100	2.1	1.7	ng/L	2.07	355-46-4-LN	1
PFHxS-BR*	16	2.1	1.7	ng/L	2.07	355-46-4-BR	1
PFNA*	110	2.1	1.9	ng/L	2.07	375-95-1	1
8:2 FTSA*	87	2.1	1.0	ng/L	2.07	39108-34-4	1
PFHpS*	110	2.1	2.1	ng/L	2.07	375-92-8	1
PFDA*	97	2.1	2.1	ng/L	2.07	335-76-2	1
N-MeFOSAA*	110	2.1	2.1	ng/L	2.07	2355-31-9	1
EtFOSAA*	110	4.1	2.1	ng/L	2.07	2991-50-6	1
PFOS*	160	2.1	2.0	ng/L	2.07	1763-23-1	1
PFOS-LN*	110	2.1	2.0	ng/L	2.07	1763-23-1-LN	1
PFOS-BR*	51	2.1	2.0	ng/L	2.07	1763-23-1-BR	1
PFUnDA*	100	2.1	1.4	ng/L	2.07	2058-94-8	1
PFNS*	110	2.1	1.4	ng/L	2.07	68259-12-1	1
PFDoDA*	97	2.1	1.7	ng/L	2.07	307-55-1	1
PFDS*	110	2.1	1.4	ng/L	2.07	335-77-3	1
PFTrDA*	120	2.1	1.2	ng/L	2.07	72629-94-8	1
FOSA*	110	2.1	1.9	ng/L	2.07	754-91-6	1
PFTeDA*	130	4.1	1.9	ng/L	2.07	376-06-7	1
11Cl-PF3OUdS*	110	2.1	1.9	ng/L	2.07	763051-92-9	1
9Cl-PF3ONS*	110	2.1	1.4	ng/L	2.07	756426-58-1	1
ADONA*	93	2.1	2.1	ng/L	2.07	919005-14-4	1
HFPO-DA*	98	4.1	2.1	ng/L	2.07	13252-13-6	1

1-spiked @ 103.5 ng/L

Analytical Laboratory Report

Lab Sample ID: S33939.03
Sample Tag: MSD MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140627

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.40/7.00/11	ASTMD7979-19M	03/23/22 14:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/24/22 16:19, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	120	10	10	ng/L	2.04	375-22-4	1
PFPeA*	110	4.1	1.0	ng/L	2.04	2706-90-3	1
4:2 FTSA*	100	2.0	1.6	ng/L	2.04	757124-72-4	1
PFHxA*	93	2.0	1.4	ng/L	2.04	307-24-4	1
PFBS*	100	2.0	1.4	ng/L	2.04	375-73-5	1
PFHpA*	99	2.0	1.4	ng/L	2.04	375-85-9	1
PFPeS*	100	2.0	1.8	ng/L	2.04	2706-91-4	1
6:2 FTSA*	110	2.0	2.0	ng/L	2.04	27619-97-2	1
PFOA*	93	2.0	1.6	ng/L	2.04	335-67-1	1
PFHxS*	95	2.0	1.6	ng/L	2.04	355-46-4	1
PFHxS-LN*	78	2.0	1.6	ng/L	2.04	355-46-4-LN	1
PFHxS-BR*	15	2.0	1.6	ng/L	2.04	355-46-4-BR	1
PFNA*	83	2.0	1.8	ng/L	2.04	375-95-1	1
8:2 FTSA*	110	2.0	1.0	ng/L	2.04	39108-34-4	1
PFHpS*	95	2.0	2.0	ng/L	2.04	375-92-8	1
PFDA*	92	2.0	2.0	ng/L	2.04	335-76-2	1
N-MeFOSAA*	110	2.0	2.0	ng/L	2.04	2355-31-9	1
EtFOSAA*	95	4.1	2.0	ng/L	2.04	2991-50-6	1
PFOS*	170	2.0	2.0	ng/L	2.04	1763-23-1	1
PFOS-LN*	110	2.0	2.0	ng/L	2.04	1763-23-1-LN	1
PFOS-BR*	52	2.0	2.0	ng/L	2.04	1763-23-1-BR	1
PFUnDA*	97	2.0	1.4	ng/L	2.04	2058-94-8	1
PFNS*	110	2.0	1.4	ng/L	2.04	68259-12-1	1
PFDoDA*	97	2.0	1.6	ng/L	2.04	307-55-1	1
PFDS*	110	2.0	1.4	ng/L	2.04	335-77-3	1
PFTrDA*	110	2.0	1.2	ng/L	2.04	72629-94-8	1
FOSA*	110	2.0	1.8	ng/L	2.04	754-91-6	1
PFTeDA*	110	4.1	1.8	ng/L	2.04	376-06-7	1
11Cl-PF3OUdS*	110	2.0	1.8	ng/L	2.04	763051-92-9	1
9Cl-PF3ONS*	100	2.0	1.4	ng/L	2.04	756426-58-1	1
ADONA*	83	2.0	2.0	ng/L	2.04	919005-14-4	1
HFPO-DA*	86	4.1	2.0	ng/L	2.04	13252-13-6	1

1-spiked @ 102 ng/L

Analytical Laboratory Report

Lab Sample ID: S33939.04
Sample Tag: EB-1-31622
Collected Date/Time: 03/16/2022 15:53
Matrix: Water
COC Reference: 140627

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	13.06/7.07/12	ASTMD7979-19M	03/23/22 14:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/24/22 16:38, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	2	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2	375-95-1	
8:2 FTSA*	Not detected	2.0	1.0	ng/L	2	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2	2991-50-6	
PFOS*	Not detected	2.0	2.0	ng/L	2	1763-23-1	
PFOS-LN*	Not detected	2.0	2.0	ng/L	2	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	2.0	ng/L	2	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	2	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	2	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2	919005-14-4	
HFPO-DA*	Not detected	4.0	2.0	ng/L	2	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S33939.05
Sample Tag: Trip Blank
Collected Date/Time: 03/16/2022 00:01
Matrix: Water
COC Reference: 140627

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	11.71/6.95/10	ASTMD7979-19M	03/23/22 14:45	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 03/24/22 16:58, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	11	11	ng/L	2.1	375-22-4	
PFPeA*	Not detected	4.2	1.1	ng/L	2.1	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.7	ng/L	2.1	757124-72-4	
PFHxA*	Not detected	2.1	1.5	ng/L	2.1	307-24-4	
PFBS*	Not detected	2.1	1.5	ng/L	2.1	375-73-5	
PFHpA*	Not detected	2.1	1.5	ng/L	2.1	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.1	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.1	27619-97-2	
PFOA*	Not detected	2.1	1.7	ng/L	2.1	335-67-1	
PFHxS*	Not detected	2.1	1.7	ng/L	2.1	355-46-4	
PFHxS-LN*	Not detected	2.1	1.7	ng/L	2.1	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.7	ng/L	2.1	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.1	375-95-1	
8:2 FTSA*	Not detected	2.1	1.1	ng/L	2.1	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.1	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.1	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.1	2355-31-9	
EtFOSAA*	Not detected	4.2	2.1	ng/L	2.1	2991-50-6	
PFOS*	Not detected	2.1	2.1	ng/L	2.1	1763-23-1	
PFOS-LN*	Not detected	2.1	2.1	ng/L	2.1	1763-23-1-LN	
PFOS-BR*	Not detected	2.1	2.1	ng/L	2.1	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.5	ng/L	2.1	2058-94-8	
PFNS*	Not detected	2.1	1.5	ng/L	2.1	68259-12-1	
PFDoDA*	Not detected	2.1	1.7	ng/L	2.1	307-55-1	
PFDS*	Not detected	2.1	1.5	ng/L	2.1	335-77-3	
PFTrDA*	Not detected	2.1	1.3	ng/L	2.1	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.1	754-91-6	
PFTeDA*	Not detected	4.2	1.9	ng/L	2.1	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.1	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.5	ng/L	2.1	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.1	919005-14-4	
HFPO-DA*	Not detected	4.2	2.1	ng/L	2.1	13252-13-6	

Merit Laboratories Login Checklist

Lab Set ID: S33939
Client: APPLIED (Applied Ecosystems)
Project: RACER Flint West #12990
Submitted: 03/17/2022 12:20 Login User: PFD

Attention: Rodney Abke
Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.2
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # _____ OF _____ 140627

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Rodney Abke
COMPANY: Applied Eco Systems
ADDRESS: Cr 4300 S. Saginaw Street
CITY: Burton STATE: MI ZIP CODE: 48529
PHONE NO.: 810 715 2525 FAX NO.: 810 715 2526 P.O. NO.: P0795930
E-MAIL ADDRESS: rabke@appliedecosystems.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Monica Wallinghford ☐ SAME
COMPANY: Revitalizing Auto Communities Environmental Response (Recen) Trust
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: 313 486 2978 E-MAIL ADDRESS: MWallinghford@recentrust.org

PROJECT NO./NAME: Recen Flint West # 17990
SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other _____

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS/PFOS **	Special Instructions
33934.01	3-16	15:25	~~PAS~~ MW-1075-31622	W	3	X							X	** - 25 compound list
.02	3-16	15:25	MS MW-1075-31622	W	3	X							X	
.03	3-16	15:25	MSD MW-1075-31622	W	3	X							X	
.04	3-16	15:55	EB-1-31622	W	3	X							X	report down to MDLs
.05	3-16		Trip Blank	W	3	X								

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Jacob Henderson AE ☑ Sampler	DATE: 3-16-22	TIME: 16:30	
RECEIVED BY: SIGNATURE/ORGANIZATION: AE	DATE: 3-16-22	TIME: 16:30	
RELINQUISHED BY: SIGNATURE/ORGANIZATION:	DATE: 3-17-22	TIME: 11:35	
RECEIVED BY: SIGNATURE/ORGANIZATION:	DATE: 3/17/22	TIME: 1135	

RELINQUISHED BY: SIGNATURE/ORGANIZATION:	DATE: 3/17/22	TIME: 1720	
RECEIVED BY: SIGNATURE/ORGANIZATION:	DATE: 3/17/22	TIME: 1220	

SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL: 3.2
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

Analytical Laboratory Report

Report ID: S33940.01(01)
Generated on 03/24/2022

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S33940.01-S33940.04
Project: RACER Flint West #12990
Collected Date(s): 03/16/2022
Submitted Date/Time: 03/17/2022 12:20
Sampled by: Unknown
P.O. #: 795930

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
N/A	Not Applicable
SM3500-Cr B	Standard Method 3500 Cr B 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003

Analytical Laboratory Report

Sample Summary (4 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S33940.01	MW-103S-31622	Water	03/16/22 15:25
S33940.02	MS MW-103S-31622	Water	03/16/22 15:25
S33940.03	MSD MW-103S-31622	Water	03/16/22 15:25
S33940.04	EB-1-31622	Water	03/16/22 15:53

Analytical Laboratory Report

Lab Sample ID: S33940.01
Sample Tag: MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Plastic	HNO3	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/24/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/17/22 14:20, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/17/22 14:14, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 12:39, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.008	0.002	0.000255	mg/L	5	7440-38-2	f
Chromium, Dissolved	0.000238	0.005	0.0000965	mg/L	5	7440-47-3	bf
Copper, Dissolved	Not detected	0.005	0.000377	mg/L	5	7440-50-8	f
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	Not detected	0.005	0.00209	mg/L	5	7782-49-2	f
Zinc, Dissolved	0.001750	0.005	0.000730	mg/L	5	7440-66-6	bf

Method: E200.8, Run Date: 03/24/22 12:57, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.039	0.002	0.000255	mg/L	5	7440-38-2	
Chromium	0.000258	0.005	0.0000965	mg/L	5	7440-47-3	b
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Zinc	0.001720	0.005	0.000730	mg/L	5	7440-66-6	b

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/24/22 01:49, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	Not detected	50	8.5	ug/L	1	67-64-1	

c-Filtered in lab
f-Filtered and preserved in lab
b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S33940.01 (continued)
Sample Tag: MW-103S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/24/22 01:49, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.18	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	0.21	1	0.10	ug/L	1	75-01-4	J
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	Not detected	5	0.10	ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	0.12	1	0.10	ug/L	1	156-59-2	J
Tetrahydrofuran*	Not detected	90	0.20	ug/L	1	109-99-9	
Chloroform	Not detected	1	0.10	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	0.54	1	0.10	ug/L	1	71-43-2	J
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	Not detected	1	0.10	ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	0.64	1	0.10	ug/L	1	108-90-7	J
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33940.01 (continued)
Sample Tag: MW-103S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/24/22 01:49, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	0.17	5	0.10	ug/L	1	120-82-1	JB
1,2,3-Trichlorobenzene	0.140	5	0.040	ug/L	1	87-61-6	JB
Naphthalene	Not detected	5	0.10	ug/L	1	91-20-3	
2-Methylnaphthalene	0.30	5	0.10	ug/L	1	91-57-6	JB

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Analytical Laboratory Report

Lab Sample ID: S33940.02
Sample Tag: MS MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Plastic	HNO3	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/24/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/17/22 14:24, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.02	0.002	mg/L	2	18540-29-9	c1

Method: SM3500-Cr B, Run Date: 03/17/22 14:17, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.02	0.002	mg/L	2	18540-29-9	1

Metals

Method: E200.8, Run Date: 03/24/22 12:40, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.250	0.002	0.000255	mg/L	5	7440-38-2	f
Chromium, Dissolved	0.245	0.005	0.0000965	mg/L	5	7440-47-3	f
Copper, Dissolved	0.234	0.005	0.000377	mg/L	5	7440-50-8	f
Lead, Dissolved	0.231	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	0.249	0.005	0.00209	mg/L	5	7782-49-2	f
Zinc, Dissolved	0.249	0.005	0.000730	mg/L	5	7440-66-6	f

Method: E200.8, Run Date: 03/24/22 12:59, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.298	0.002	0.000255	mg/L	5	7440-38-2	
Chromium	0.257	0.005	0.0000965	mg/L	5	7440-47-3	
Copper	0.246	0.005	0.000377	mg/L	5	7440-50-8	
Lead	0.252	0.003	0.000190	mg/L	5	7439-92-1	
Selenium	0.272	0.005	0.00209	mg/L	5	7782-49-2	
Zinc	0.263	0.005	0.000730	mg/L	5	7440-66-6	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/23/22 22:56, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	41	10	0.10	ug/L	1	60-29-7	2
Acetone	45.0	50	8.5	ug/L	1	67-64-1	J2

c-Filtered in lab 1-Sample Spiked @ 1.0mg/L
f-Filtered and preserved in lab
2-Spiked at 50ug/L
J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S33940.02 (continued)
Sample Tag: MS MW-103S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/23/22 22:56, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	47	1	0.030	ug/L	1	74-88-4	1
Carbon disulfide	43	5	0.10	ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	46	5	0.10	ug/L	1	1634-04-4	1
Acrylonitrile	46	2	0.10	ug/L	1	107-13-1	1
2-Butanone (MEK)	48	25	4.7	ug/L	1	78-93-3	1
Dichlorodifluoromethane	51	5	0.40	ug/L	1	75-71-8	1
Chloromethane	35	5	0.10	ug/L	1	74-87-3	1
Vinyl chloride	33	1	0.10	ug/L	1	75-01-4	1
Bromomethane	31	5	0.10	ug/L	1	74-83-9	1
Chloroethane	29	5	0.20	ug/L	1	75-00-3	1
Trichlorofluoromethane	37	1	0.40	ug/L	1	75-69-4	1
1,1-Dichloroethene	43	1	0.10	ug/L	1	75-35-4	1
Methylene chloride	44	5	0.10	ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	46	1	0.10	ug/L	1	156-60-5	1
1,1-Dichloroethane	48	1	0.10	ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	50	1	0.10	ug/L	1	156-59-2	1
Tetrahydrofuran*	44.86	90	0.20	ug/L	1	109-99-9	J1
Chloroform	49	1	0.10	ug/L	1	67-66-3	1
Bromochloromethane	51	1	0.10	ug/L	1	74-97-5	1
1,1,1-Trichloroethane	46	1	0.10	ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	52	50	0.10	ug/L	1	108-10-1	1
2-Hexanone	51	50	0.10	ug/L	1	591-78-6	1
Carbon tetrachloride	45	1	0.10	ug/L	1	56-23-5	1
Benzene	46	1	0.10	ug/L	1	71-43-2	1
1,2-Dichloroethane	45	1	0.10	ug/L	1	107-06-2	1
Trichloroethene	50	1	0.10	ug/L	1	79-01-6	1
1,2-Dichloropropane	45	1	0.10	ug/L	1	78-87-5	1
Bromodichloromethane	50	1	0.10	ug/L	1	75-27-4	1
Dibromomethane	53	5	0.10	ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	52	1	0.10	ug/L	1	10061-01-5	1
Toluene	50	1	0.10	ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	58	1	0.10	ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	51	1	0.050	ug/L	1	79-00-5	1
Tetrachloroethene	58	1	0.20	ug/L	1	127-18-4	1
trans-1,4-Dichloro-2-butene	35	1	0.10	ug/L	1	110-57-6	1
Dibromochloromethane	51	5	0.020	ug/L	1	124-48-1	1
1,2-Dibromoethane	52	1	0.10	ug/L	1	106-93-4	1
Chlorobenzene	49	1	0.10	ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	50	1	0.10	ug/L	1	630-20-6	1
Ethylbenzene	49	1	0.10	ug/L	1	100-41-4	1
p,m-Xylene*	96	2	0.20	ug/L	1		1
o-Xylene	48	1	0.050	ug/L	1	95-47-6	1
Styrene	36	1	0.10	ug/L	1	100-42-5	1
Isopropylbenzene	49	5	0.030	ug/L	1	98-82-8	1
Bromoform	51	1	0.10	ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	49	1	0.050	ug/L	1	79-34-5	1
1,2,3-Trichloropropane	49	1	0.10	ug/L	1	96-18-4	1
n-Propylbenzene	51	1	0.10	ug/L	1	103-65-1	1

1-Spiked at 50ug/L
J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S33940.02 (continued)
Sample Tag: MS MW-103S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/23/22 22:56, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bromobenzene	51	1	0.10	ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	48	1	0.10	ug/L	1	108-67-8	1
tert-Butylbenzene	50	1	0.10	ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	39	1	0.10	ug/L	1	95-63-6	1
sec-Butylbenzene	52	1	0.050	ug/L	1	135-98-8	1
p-Isopropyltoluene	52	5	0.040	ug/L	1	99-87-6	1
1,3-Dichlorobenzene	52	1	0.10	ug/L	1	541-73-1	1
1,4-Dichlorobenzene	51	1	0.10	ug/L	1	106-46-7	1
1,2-Dichlorobenzene	52	1	0.10	ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	52	1	0.040	ug/L	1	526-73-8	1
n-Butylbenzene	52	1	0.040	ug/L	1	104-51-8	1
Hexachloroethane	53	5	0.10	ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	76	5	0.10	ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	74	5	0.10	ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	74	5	0.040	ug/L	1	87-61-6	1
Naphthalene	57	5	0.10	ug/L	1	91-20-3	1
2-Methylnaphthalene	73	5	0.10	ug/L	1	91-57-6	1

1-Spiked at 50ug/L

Analytical Laboratory Report

Lab Sample ID: S33940.03
Sample Tag: MSD MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Plastic	HNO3	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/24/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/17/22 14:26, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.02	0.002	mg/L	2	18540-29-9	c1

Method: SM3500-Cr B, Run Date: 03/17/22 14:18, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.02	0.002	mg/L	2	18540-29-9	1

Metals

Method: E200.8, Run Date: 03/24/22 12:41, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.268	0.002	0.000255	mg/L	5	7440-38-2	f
Chromium, Dissolved	0.260	0.005	0.0000965	mg/L	5	7440-47-3	f
Copper, Dissolved	0.245	0.005	0.000377	mg/L	5	7440-50-8	f
Lead, Dissolved	0.248	0.003	0.000190	mg/L	5	7439-92-1	f
Selenium, Dissolved	0.271	0.005	0.00209	mg/L	5	7782-49-2	f
Zinc, Dissolved	0.251	0.005	0.000730	mg/L	5	7440-66-6	f

Method: E200.8, Run Date: 03/24/22 13:00, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.298	0.002	0.000255	mg/L	5	7440-38-2	
Chromium	0.249	0.005	0.0000965	mg/L	5	7440-47-3	
Copper	0.245	0.005	0.000377	mg/L	5	7440-50-8	
Lead	0.243	0.003	0.000190	mg/L	5	7439-92-1	
Selenium	0.281	0.005	0.00209	mg/L	5	7782-49-2	
Zinc	0.262	0.005	0.000730	mg/L	5	7440-66-6	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/23/22 23:15, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	40	10	0.10	ug/L	1	60-29-7	2
Acetone	46.7	50	8.5	ug/L	1	67-64-1	J2

c-Filtered in lab 1-Sample Spiked @ 1.0mg/L
f-Filtered and preserved in lab
2-Spiked at 50ug/L
J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S33940.03 (continued)
Sample Tag: MSD MW-103S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/23/22 23:15, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	44	1	0.030	ug/L	1	74-88-4	1
Carbon disulfide	41	5	0.10	ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	45	5	0.10	ug/L	1	1634-04-4	1
Acrylonitrile	49	2	0.10	ug/L	1	107-13-1	1
2-Butanone (MEK)	50	25	4.7	ug/L	1	78-93-3	1
Dichlorodifluoromethane	52	5	0.40	ug/L	1	75-71-8	1
Chloromethane	34	5	0.10	ug/L	1	74-87-3	1
Vinyl chloride	31	1	0.10	ug/L	1	75-01-4	1
Bromomethane	27	5	0.10	ug/L	1	74-83-9	1
Chloroethane	27	5	0.20	ug/L	1	75-00-3	1
Trichlorofluoromethane	36	1	0.40	ug/L	1	75-69-4	1
1,1-Dichloroethene	41	1	0.10	ug/L	1	75-35-4	1
Methylene chloride	42	5	0.10	ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	43	1	0.10	ug/L	1	156-60-5	1
1,1-Dichloroethane	45	1	0.10	ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	47	1	0.10	ug/L	1	156-59-2	1
Tetrahydrofuran*	49.19	90	0.20	ug/L	1	109-99-9	J1
Chloroform	47	1	0.10	ug/L	1	67-66-3	1
Bromochloromethane	49	1	0.10	ug/L	1	74-97-5	1
1,1,1-Trichloroethane	44	1	0.10	ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	54	50	0.10	ug/L	1	108-10-1	1
2-Hexanone	54	50	0.10	ug/L	1	591-78-6	1
Carbon tetrachloride	43	1	0.10	ug/L	1	56-23-5	1
Benzene	43	1	0.10	ug/L	1	71-43-2	1
1,2-Dichloroethane	42	1	0.10	ug/L	1	107-06-2	1
Trichloroethene	47	1	0.10	ug/L	1	79-01-6	1
1,2-Dichloropropane	43	1	0.10	ug/L	1	78-87-5	1
Bromodichloromethane	48	1	0.10	ug/L	1	75-27-4	1
Dibromomethane	52	5	0.10	ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	51	1	0.10	ug/L	1	10061-01-5	1
Toluene	48	1	0.10	ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	54	1	0.10	ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	49	1	0.050	ug/L	1	79-00-5	1
Tetrachloroethene	56	1	0.20	ug/L	1	127-18-4	1
trans-1,4-Dichloro-2-butene	36	1	0.10	ug/L	1	110-57-6	1
Dibromochloromethane	51	5	0.020	ug/L	1	124-48-1	1
1,2-Dibromoethane	53	1	0.10	ug/L	1	106-93-4	1
Chlorobenzene	49	1	0.10	ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	48	1	0.10	ug/L	1	630-20-6	1
Ethylbenzene	47	1	0.10	ug/L	1	100-41-4	1
p,m-Xylene*	91	2	0.20	ug/L	1		1
o-Xylene	46	1	0.050	ug/L	1	95-47-6	1
Styrene	34	1	0.10	ug/L	1	100-42-5	1
Isopropylbenzene	49	5	0.030	ug/L	1	98-82-8	1
Bromoform	52	1	0.10	ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	51	1	0.050	ug/L	1	79-34-5	1
1,2,3-Trichloropropane	50	1	0.10	ug/L	1	96-18-4	1
n-Propylbenzene	49	1	0.10	ug/L	1	103-65-1	1

1-Spiked at 50ug/L
J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S33940.03 (continued)
Sample Tag: MSD MW-103S-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/23/22 23:15, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bromobenzene	49	1	0.10	ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	47	1	0.10	ug/L	1	108-67-8	1
tert-Butylbenzene	49	1	0.10	ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	37	1	0.10	ug/L	1	95-63-6	1
sec-Butylbenzene	52	1	0.050	ug/L	1	135-98-8	1
p-Isopropyltoluene	51	5	0.040	ug/L	1	99-87-6	1
1,3-Dichlorobenzene	51	1	0.10	ug/L	1	541-73-1	1
1,4-Dichlorobenzene	50	1	0.10	ug/L	1	106-46-7	1
1,2-Dichlorobenzene	51	1	0.10	ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	50	1	0.040	ug/L	1	526-73-8	1
n-Butylbenzene	51	1	0.040	ug/L	1	104-51-8	1
Hexachloroethane	53	5	0.10	ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	84	5	0.10	ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	74	5	0.10	ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	74	5	0.040	ug/L	1	87-61-6	1
Naphthalene	60	5	0.10	ug/L	1	91-20-3	1
2-Methylnaphthalene	77	5	0.10	ug/L	1	91-57-6	1

1-Spiked at 50ug/L

Analytical Laboratory Report

Lab Sample ID: S33940.04
Sample Tag: EB-1-31622
Collected Date/Time: 03/16/2022 15:53
Matrix: Water
COC Reference: 140629

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	3.2	IR
3	40ml Glass	HCL	Yes	3.2	IR
1	125ml Plastic	HNO3	Yes	3.2	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	03/24/22 11:00	BML	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	
Metal Digestion	Completed	SW3015A	03/24/22 10:30	CCM	

Inorganics

Method: SM3500-Cr B, Run Date: 03/17/22 14:27, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI, Dissolved	Not detected	0.01	0.002	mg/L	1	18540-29-9	c

Method: SM3500-Cr B, Run Date: 03/17/22 14:20, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium VI	Not detected	0.01	0.002	mg/L	1	18540-29-9	

Metals

Method: E200.8, Run Date: 03/24/22 12:54, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.000322	0.002	0.000102	mg/L	2	7440-38-2	b
Chromium	0.000075	0.005	0.0000386	mg/L	2	7440-47-3	b
Copper	Not detected	0.005	0.000150	mg/L	2	7440-50-8	
Lead	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	
Selenium	Not detected	0.005	0.000838	mg/L	2	7782-49-2	
Zinc	0.000651	0.005	0.000292	mg/L	2	7440-66-6	b

Method: E200.8, Run Date: 03/24/22 12:55, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.000364	0.002	0.000102	mg/L	2	7440-38-2	bf
Chromium, Dissolved	0.000216	0.005	0.0000386	mg/L	2	7440-47-3	bf
Copper, Dissolved	Not detected	0.005	0.000150	mg/L	2	7440-50-8	f
Lead, Dissolved	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	f
Selenium, Dissolved	Not detected	0.005	0.000838	mg/L	2	7782-49-2	f
Zinc, Dissolved	0.000461	0.005	0.000292	mg/L	2	7440-66-6	bf

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/24/22 01:30, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10	0.10	ug/L	1	60-29-7	
Acetone	14.6	50	8.5	ug/L	1	67-64-1	J

c-Filtered in lab
b-Value detected less than reporting limit, but greater than MDL
f-Filtered and preserved in lab
J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S33940.04 (continued)
Sample Tag: EB-1-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/24/22 01:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Methyl iodide	Not detected	1	0.030	ug/L	1	74-88-4	
Carbon disulfide	0.15	5	0.10	ug/L	1	75-15-0	JB
tert-Methyl butyl ether (MTBE)	Not detected	5	0.10	ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2	0.10	ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25	4.7	ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5	0.40	ug/L	1	75-71-8	
Chloromethane	Not detected	5	0.10	ug/L	1	74-87-3	
Vinyl chloride	Not detected	1	0.10	ug/L	1	75-01-4	
Bromomethane	Not detected	5	0.10	ug/L	1	74-83-9	
Chloroethane	Not detected	5	0.20	ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1	0.40	ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1	0.10	ug/L	1	75-35-4	
Methylene chloride	0.12	5	0.10	ug/L	1	75-09-2	JB
trans-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1	0.10	ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1	0.10	ug/L	1	156-59-2	
Tetrahydrofuran*	2.64	90	0.20	ug/L	1	109-99-9	J
Chloroform	Not detected	1	0.10	ug/L	1	67-66-3	
Bromochloromethane	Not detected	1	0.10	ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1	0.10	ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50	0.10	ug/L	1	108-10-1	
2-Hexanone	Not detected	50	0.10	ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1	0.10	ug/L	1	56-23-5	
Benzene	Not detected	1	0.10	ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1	0.10	ug/L	1	107-06-2	
Trichloroethene	Not detected	1	0.10	ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1	0.10	ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1	0.10	ug/L	1	75-27-4	
Dibromomethane	Not detected	5	0.10	ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-01-5	
Toluene	0.12	1	0.10	ug/L	1	108-88-3	J
trans-1,3-Dichloropropene	Not detected	1	0.10	ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1	0.050	ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1	0.20	ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1	0.10	ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5	0.020	ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1	0.10	ug/L	1	106-93-4	
Chlorobenzene	Not detected	1	0.10	ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1	0.10	ug/L	1	630-20-6	
Ethylbenzene	Not detected	1	0.10	ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2	0.20	ug/L	1		
o-Xylene	Not detected	1	0.050	ug/L	1	95-47-6	
Styrene	Not detected	1	0.10	ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5	0.030	ug/L	1	98-82-8	
Bromoform	Not detected	1	0.10	ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1	0.050	ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1	0.10	ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1	0.10	ug/L	1	103-65-1	
Bromobenzene	Not detected	1	0.10	ug/L	1	108-86-1	

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Lab Sample ID: S33940.04 (continued)
Sample Tag: EB-1-31622

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 03/24/22 01:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,3,5-Trimethylbenzene	Not detected	1	0.10	ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1	0.10	ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1	0.10	ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1	0.050	ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5	0.040	ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1	0.10	ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1	0.10	ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1	0.10	ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1	0.040	ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1	0.040	ug/L	1	104-51-8	
Hexachloroethane	Not detected	5	0.10	ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5	0.10	ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	0.14	5	0.10	ug/L	1	120-82-1	JB
1,2,3-Trichlorobenzene	0.200	5	0.040	ug/L	1	87-61-6	JB
Naphthalene	0.12	5	0.10	ug/L	1	91-20-3	JB
2-Methylnaphthalene	0.26	5	0.10	ug/L	1	91-57-6	JB

J-Estimated value less than reporting limit, but greater than MDL B-Compound also found in associated method blank

Merit Laboratories Login Checklist

Lab Set ID: S33940
Client: APPLIED (Applied Ecosystems)
Project: RACER Flint West #12990
Submitted: 03/17/2022 12:20 Login User: PFD

Attention: Rodney Abke
Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.2
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[X] Yes	[ ] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[X] Yes	[ ] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[X] No	[ ] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S33940 Submitted: 03/17/2022 12:20

Client: APPLIED (Applied Ecosystems)

Project: RACER Flint West #12990

Initial Preservation Check: 03/18/2022 08:46 MMC

Preservation Recheck (E200.8): N/A

Attention: Rodney Abke
Address: Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:
Email: rabke@appliedecosystems.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S33940.01	125ml Plastic HNO3	<2			
S33940.02	125ml Plastic HNO3	<2			
S33940.03	125ml Plastic HNO3	<2			
S33940.04	125ml Plastic HNO3	<2			

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # _____ OF _____ 140629

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Rodney Abke
COMPANY: Applied Eco Systems
ADDRESS: 6r 4300 S. Saginaw Street
CITY: Burton STATE: MI ZIP CODE: 48529
PHONE NO.: 810 715 2525 FAX NO.: 810 715 2526 P.O. NO.: PO795930
E-MAIL ADDRESS: rabke@appliedecosystems.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Monica Wallingford ☐ SAME
COMPANY: Crystalizing Auto Communities Environmental Response (RACER) Trust
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: 313 486 2978 E-MAIL ADDRESS: mwallingford@racertrust.org

PROJECT NO./NAME: Racer Flint West #12990
SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES
Project Locations
☐ Detroit ☐ New York
☐ Other _____
Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	VOCs	Metals, dissolved *	Metals, total *	Special Instructions
33990.01	3-16	15:25	MW-1035-31622	W	6	X	X	X					X	X	X	*metals list includes
.02	3-16	15:25	MS MW-1035-31622	W	6	X	X	X					X	X	X	Ar, Cr-total,
.03	3-16	15:25	MSD MW-1035-31622	W	6	X	X	X					X	X	X	Cr-Hex, Cu
.04	3-16	15:57	EB-1-31622	W	6	X	X	X					X	X	X	Pb, Se, Zn
																report down to MCLs

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Joshua Hendrickson AE ☑ Sampler DATE: 3-16-22 TIME: 16:30
RECEIVED BY: SIGNATURE/ORGANIZATION: AE DATE: 3-16-22 TIME: 16:30
RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: 3-17-22 TIME: 11:35
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 3/17/22 TIME: 1132

RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: 3/17/22 TIME: 1220
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 3/17/22 TIME: 1220

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.2

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Quality Control Report

Report ID: QC-S33914-01
Generated on 03/24/2022

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S33914.01-S33914.10
Project: RACER Flint West #12990
Submitted Date/Time: 03/16/2022 15:25
Sampled by: Unknown
P.O. #: 795930

QC Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S33914.01

Sample Tag: FB-1

Collected Date/Time: 03/16/2022 09:09

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:08	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 16:44	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 11:26	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 11:26	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 11:26	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 11:26	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 11:26	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 11:26	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 20:27	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S33914.02
Sample Tag: MW-104S-31622
Collected Date/Time: 03/16/2022 09:49
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:17	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 16:46	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 11:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 11:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 11:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 11:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 11:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 11:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 22:23	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S33914.03
Sample Tag: MW-1106SR-31622
Collected Date/Time: 03/16/2022 10:24
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:19	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 16:48	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 11:42	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 11:42	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 11:42	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 11:42	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 11:42	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 11:42	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 22:42	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S33914.04

Sample Tag: MW-112S-31622

Collected Date/Time: 03/16/2022 11:03

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:21	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 16:51	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 11:46	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 11:46	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 11:46	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 11:46	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 11:46	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 11:46	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 23:01	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S33914.05
Sample Tag: MW-110S-31622
Collected Date/Time: 03/16/2022 11:56
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:26	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 16:55	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 11:59	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 11:59	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 11:59	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 11:59	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 11:59	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 11:59	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 23:21	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S33914.06

Sample Tag: MW-108S-31622

Collected Date/Time: 03/16/2022 12:42

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:28	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 16:58	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 12:13	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 12:13	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 12:13	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 12:13	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 12:13	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 12:13	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 23:40	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S33914.07

Sample Tag: MW-114S-31622

Collected Date/Time: 03/16/2022 13:04

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:31	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 17:00	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 12:21	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 12:21	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 12:21	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 12:21	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 12:21	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 12:21	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 23:59	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S33914.08

Sample Tag: MW-117-31622

Collected Date/Time: 03/16/2022 14:16

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:46	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 17:04	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 12:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 12:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 12:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 12:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 12:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 12:27	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/19/22 00:18	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

Lab Sample ID: S33914.09

Sample Tag: Dupe1 31622

Collected Date/Time: 03/16/2022 00:01

Matrix: Water

COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:37	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Chromium VI	SM3500-Cr B	03/16/22 17:06	CHR220316W1	CHR220316W1	No	BLK/LCS/MS/DUP
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 12:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 12:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 12:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 12:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 12:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 12:33	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/19/22 00:38	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Analysis Summary

Lab Sample ID: S33914.10
Sample Tag: Trip Blank
Collected Date/Time: 03/16/2022 00:01
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 20:07	220318A9	VF220318W2	Yes	BLK/LCS/LCSD

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: CHR220316W1

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33914.01	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:08	CHR220316W1
S33914.01	Chromium VI	SM3500-Cr B	03/16/22 16:44	CHR220316W1
S33914.02	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:17	CHR220316W1
S33914.02	Chromium VI	SM3500-Cr B	03/16/22 16:46	CHR220316W1
S33914.03	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:19	CHR220316W1
S33914.03	Chromium VI	SM3500-Cr B	03/16/22 16:48	CHR220316W1
S33914.04	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:21	CHR220316W1
S33914.04	Chromium VI	SM3500-Cr B	03/16/22 16:51	CHR220316W1
S33914.05	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:26	CHR220316W1
S33914.05	Chromium VI	SM3500-Cr B	03/16/22 16:55	CHR220316W1
S33914.06	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:28	CHR220316W1
S33914.06	Chromium VI	SM3500-Cr B	03/16/22 16:58	CHR220316W1
S33914.07	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:31	CHR220316W1
S33914.07	Chromium VI	SM3500-Cr B	03/16/22 17:00	CHR220316W1
S33914.08	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:46	CHR220316W1
S33914.08	Chromium VI	SM3500-Cr B	03/16/22 17:04	CHR220316W1
S33914.09	Chromium VI, Dissolved	SM3500-Cr B	03/16/22 17:37	CHR220316W1
S33914.09	Chromium VI	SM3500-Cr B	03/16/22 17:06	CHR220316W1

Metals, Prep Batch ID: MTD-032422-1

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33914.01	Arsenic, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A
S33914.01	Arsenic	E200.8	03/24/22 11:26	MT4-22-0324A
S33914.01	Chromium, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A
S33914.01	Chromium	E200.8	03/24/22 11:26	MT4-22-0324A
S33914.01	Copper, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A
S33914.01	Copper	E200.8	03/24/22 11:26	MT4-22-0324A
S33914.01	Lead, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A
S33914.01	Lead	E200.8	03/24/22 11:26	MT4-22-0324A
S33914.01	Selenium, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A
S33914.01	Selenium	E200.8	03/24/22 11:26	MT4-22-0324A
S33914.01	Zinc, Dissolved	E200.8	03/24/22 11:27	MT4-22-0324A
S33914.01	Zinc	E200.8	03/24/22 11:26	MT4-22-0324A
S33914.02	Arsenic, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A
S33914.02	Arsenic	E200.8	03/24/22 11:33	MT4-22-0324A
S33914.02	Chromium, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A
S33914.02	Chromium	E200.8	03/24/22 11:33	MT4-22-0324A
S33914.02	Copper, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A
S33914.02	Copper	E200.8	03/24/22 11:33	MT4-22-0324A
S33914.02	Lead, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A
S33914.02	Lead	E200.8	03/24/22 11:33	MT4-22-0324A
S33914.02	Selenium, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A
S33914.02	Selenium	E200.8	03/24/22 11:33	MT4-22-0324A
S33914.02	Zinc, Dissolved	E200.8	03/24/22 11:37	MT4-22-0324A
S33914.02	Zinc	E200.8	03/24/22 11:33	MT4-22-0324A
S33914.03	Arsenic, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A
S33914.03	Arsenic	E200.8	03/24/22 11:42	MT4-22-0324A
S33914.03	Chromium, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A
S33914.03	Chromium	E200.8	03/24/22 11:42	MT4-22-0324A

Metals, Prep Batch ID: MTD-032422-1 (continued)

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33914.03	Copper, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A
S33914.03	Copper	E200.8	03/24/22 11:42	MT4-22-0324A
S33914.03	Lead, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A
S33914.03	Lead	E200.8	03/24/22 11:42	MT4-22-0324A
S33914.03	Selenium, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A
S33914.03	Selenium	E200.8	03/24/22 11:42	MT4-22-0324A
S33914.03	Zinc, Dissolved	E200.8	03/24/22 11:44	MT4-22-0324A
S33914.03	Zinc	E200.8	03/24/22 11:42	MT4-22-0324A
S33914.04	Arsenic, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A
S33914.04	Arsenic	E200.8	03/24/22 11:46	MT4-22-0324A
S33914.04	Chromium, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A
S33914.04	Chromium	E200.8	03/24/22 11:46	MT4-22-0324A
S33914.04	Copper, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A
S33914.04	Copper	E200.8	03/24/22 11:46	MT4-22-0324A
S33914.04	Lead, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A
S33914.04	Lead	E200.8	03/24/22 11:46	MT4-22-0324A
S33914.04	Selenium, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A
S33914.04	Selenium	E200.8	03/24/22 11:46	MT4-22-0324A
S33914.04	Zinc, Dissolved	E200.8	03/24/22 11:55	MT4-22-0324A
S33914.04	Zinc	E200.8	03/24/22 11:46	MT4-22-0324A
S33914.05	Arsenic, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A
S33914.05	Arsenic	E200.8	03/24/22 11:59	MT4-22-0324A
S33914.05	Chromium, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A
S33914.05	Chromium	E200.8	03/24/22 11:59	MT4-22-0324A
S33914.05	Copper, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A
S33914.05	Copper	E200.8	03/24/22 11:59	MT4-22-0324A
S33914.05	Lead, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A
S33914.05	Lead	E200.8	03/24/22 11:59	MT4-22-0324A
S33914.05	Selenium, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A
S33914.05	Selenium	E200.8	03/24/22 11:59	MT4-22-0324A
S33914.05	Zinc, Dissolved	E200.8	03/24/22 12:01	MT4-22-0324A
S33914.05	Zinc	E200.8	03/24/22 11:59	MT4-22-0324A
S33914.06	Arsenic, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A
S33914.06	Arsenic	E200.8	03/24/22 12:13	MT4-22-0324A
S33914.06	Chromium, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A
S33914.06	Chromium	E200.8	03/24/22 12:13	MT4-22-0324A
S33914.06	Copper, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A
S33914.06	Copper	E200.8	03/24/22 12:13	MT4-22-0324A
S33914.06	Lead, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A
S33914.06	Lead	E200.8	03/24/22 12:13	MT4-22-0324A
S33914.06	Selenium, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A
S33914.06	Selenium	E200.8	03/24/22 12:13	MT4-22-0324A
S33914.06	Zinc, Dissolved	E200.8	03/24/22 12:19	MT4-22-0324A
S33914.06	Zinc	E200.8	03/24/22 12:13	MT4-22-0324A
S33914.07	Arsenic, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A
S33914.07	Arsenic	E200.8	03/24/22 12:21	MT4-22-0324A
S33914.07	Chromium, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A
S33914.07	Chromium	E200.8	03/24/22 12:21	MT4-22-0324A
S33914.07	Copper, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A

Metals, Prep Batch ID: MTD-032422-1 (continued)

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33914.07	Copper	E200.8	03/24/22 12:21	MT4-22-0324A
S33914.07	Lead, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A
S33914.07	Lead	E200.8	03/24/22 12:21	MT4-22-0324A
S33914.07	Selenium, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A
S33914.07	Selenium	E200.8	03/24/22 12:21	MT4-22-0324A
S33914.07	Zinc, Dissolved	E200.8	03/24/22 12:25	MT4-22-0324A
S33914.07	Zinc	E200.8	03/24/22 12:21	MT4-22-0324A
S33914.08	Arsenic, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A
S33914.08	Arsenic	E200.8	03/24/22 12:27	MT4-22-0324A
S33914.08	Chromium, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A
S33914.08	Chromium	E200.8	03/24/22 12:27	MT4-22-0324A
S33914.08	Copper, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A
S33914.08	Copper	E200.8	03/24/22 12:27	MT4-22-0324A
S33914.08	Lead, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A
S33914.08	Lead	E200.8	03/24/22 12:27	MT4-22-0324A
S33914.08	Selenium, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A
S33914.08	Selenium	E200.8	03/24/22 12:27	MT4-22-0324A
S33914.08	Zinc, Dissolved	E200.8	03/24/22 12:30	MT4-22-0324A
S33914.08	Zinc	E200.8	03/24/22 12:27	MT4-22-0324A
S33914.09	Arsenic, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A
S33914.09	Arsenic	E200.8	03/24/22 12:33	MT4-22-0324A
S33914.09	Chromium, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A
S33914.09	Chromium	E200.8	03/24/22 12:33	MT4-22-0324A
S33914.09	Copper, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A
S33914.09	Copper	E200.8	03/24/22 12:33	MT4-22-0324A
S33914.09	Lead, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A
S33914.09	Lead	E200.8	03/24/22 12:33	MT4-22-0324A
S33914.09	Selenium, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A
S33914.09	Selenium	E200.8	03/24/22 12:33	MT4-22-0324A
S33914.09	Zinc, Dissolved	E200.8	03/24/22 12:36	MT4-22-0324A
S33914.09	Zinc	E200.8	03/24/22 12:33	MT4-22-0324A

Organics - Volatiles, Prep Batch ID: VF220318W2

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33914.01	Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 20:27	220318A9
S33914.02	Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 22:23	220318A9
S33914.03	Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 22:42	220318A9
S33914.04	Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 23:01	220318A9
S33914.05	Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 23:21	220318A9
S33914.06	Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 23:40	220318A9
S33914.07	Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 23:59	220318A9
S33914.08	Volatile Organics - DEQ List	SW5030C/8260C	03/19/22 00:18	220318A9
S33914.09	Volatile Organics - DEQ List	SW5030C/8260C	03/19/22 00:38	220318A9
S33914.10	Volatile Organics - DEQ List	SW5030C/8260C	03/18/22 20:07	220318A9

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.01

Sample Tag: FB-1

Collected Date/Time: 03/16/2022 09:09

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/18/2022 20:27, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**99.4**	80.0	124.0
1,2-Dichloroethane-D4		**97.4**	72.0	125.0
Toluene-D8		**91.4**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.02

Sample Tag: MW-104S-31622

Collected Date/Time: 03/16/2022 09:49

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/18/2022 22:23, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**97.9**	80.0	124.0
1,2-Dichloroethane-D4		**95.3**	72.0	125.0
Toluene-D8		**92.4**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.03

Sample Tag: MW-1106SR-31622

Collected Date/Time: 03/16/2022 10:24

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/18/2022 22:42, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**99.1**	80.0	124.0
1,2-Dichloroethane-D4		**96.6**	72.0	125.0
Toluene-D8		**91.7**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.04

Sample Tag: MW-112S-31622

Collected Date/Time: 03/16/2022 11:03

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/18/2022 23:01, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**97.6**	80.0	124.0
1,2-Dichloroethane-D4		**95.2**	72.0	125.0
Toluene-D8		**91.2**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.05

Sample Tag: MW-110S-31622

Collected Date/Time: 03/16/2022 11:56

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/18/2022 23:21, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**96.1**	80.0	124.0
1,2-Dichloroethane-D4		**101.0**	72.0	125.0
Toluene-D8		**91.6**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.06

Sample Tag: MW-108S-31622

Collected Date/Time: 03/16/2022 12:42

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/18/2022 23:40, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**97.9**	80.0	124.0
1,2-Dichloroethane-D4		**98.0**	72.0	125.0
Toluene-D8		**92.2**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.07

Sample Tag: MW-114S-31622

Collected Date/Time: 03/16/2022 13:04

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/18/2022 23:59, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**97.4**	80.0	124.0
1,2-Dichloroethane-D4		**98.4**	72.0	125.0
Toluene-D8		**93.4**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.08

Sample Tag: MW-117-31622

Collected Date/Time: 03/16/2022 14:16

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/19/2022 00:18, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**98.2**	80.0	124.0
1,2-Dichloroethane-D4		**98.5**	72.0	125.0
Toluene-D8		**92.3**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.09

Sample Tag: Dupe1 31622

Collected Date/Time: 03/16/2022 00:01

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/19/2022 00:38, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**97.0**	80.0	124.0
1,2-Dichloroethane-D4		**96.6**	72.0	125.0
Toluene-D8		**91.2**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33914.10

Sample Tag: Trip Blank

Collected Date/Time: 03/16/2022 00:01

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220318A9, Run Date: 03/18/2022 20:07, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**98.5**	80.0	124.0
1,2-Dichloroethane-D4		**97.8**	72.0	125.0
Toluene-D8		**91.8**	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220318W2

QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220318A9.BLKW18X

Run in Batch: 220318A9, Run Date: 03/18/2022 19:29, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		**98.4**	80.0	124.0
1,2-Dichloroethane-D4		**98.6**	72.0	125.0
Toluene-D8		**91.7**	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220318A9.LCSW18A

Run in Batch: 220318A9, Run Date: 03/18/2022 17:18, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		**103.5**	80.0	124.0
1,2-Dichloroethane-D4		**91.7**	72.0	125.0
Toluene-D8		**96.3**	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220318A9.LCSDW18A, Parent Sample ID: 220318A9.LCSW18A

Run in Batch: 220318A9, Run Date: 03/18/2022 17:37, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		**105.9**	80.0	124.0
1,2-Dichloroethane-D4		**96.5**	72.0	125.0
Toluene-D8		**104.8**	89.0	112.0

Inorganics, Prep Batch ID: CHR220316W1

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Blank (BLK)

Lab Sample ID: CHR220316W1.LRB1

Run in Batch: CHR220316W1, Run Date: 03/16/2022 14:12, Prep Date: 03/16/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Chromium VI		ND	0.01	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: CHR220316W1.LCS1

Run in Batch: CHR220316W1, Run Date: 03/16/2022 14:13, Prep Date: 03/16/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Chromium VI		101.8	90	110

Matrix Spike (MS)

Lab Sample ID: CHR220316W1.MS1, Parent Sample ID: S33914.02

Run in Batch: CHR220316W1, Run Date: 03/16/2022 17:41, Prep Date: 03/16/2022, Matrix: Liquid, Dilution: 2

Analyte	Flags	% Rec	LCL	UCL
Chromium VI		101.0	80	120

Matrix Spike (MS)

Lab Sample ID: CHR220316W1.MS2, Parent Sample ID: S33914.02

Run in Batch: CHR220316W1, Run Date: 03/16/2022 17:48, Prep Date: 03/16/2022, Matrix: Liquid, Dilution: 2

Analyte	Flags	% Rec	LCL	UCL
Chromium VI		101.0	80	120

Duplicate (DUP)

Lab Sample ID: CHR220316W1.DP1, Parent Sample ID: S33914.02

Run in Batch: CHR220316W1, Run Date: 03/16/2022 17:39, Prep Date: 03/16/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Chromium VI		NC	15

Duplicate (DUP)

Lab Sample ID: CHR220316W1.DP2, Parent Sample ID: S33914.02

Run in Batch: CHR220316W1, Run Date: 03/16/2022 17:45, Prep Date: 03/16/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Chromium VI		NC	15

Metals, Prep Batch ID: MTD-032422-1

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Blank (BLK)

Lab Sample ID: MT4-22-0324A.018.LRB

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 11:24, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Arsenic		ND	0.0004	mg/L
Chromium		ND	0.001	mg/L
Copper		ND	0.001	mg/L
Lead		ND	0.0006	mg/L
Selenium		ND	0.001	mg/L
Zinc		ND	0.001	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: MT4-22-0324A.017.LCS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 11:22, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		103	85	115
Chromium		100	85	115
Copper		100	85	115
Lead		98	85	115
Selenium		102	85	115
Zinc		99	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-22-0324A.037.MS, Parent Sample ID: S33914.05

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:05, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		106	75	125
Chromium		102	75	125
Copper		96	75	125
Lead		96	75	125
Selenium		107	75	125
Zinc		102	75	125

Matrix Spike (MS)

Lab Sample ID: MT4-22-0324A.058.MS, Parent Sample ID: S33940.01

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:40, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Chromium		98	75	125
Copper		94	75	125
Zinc		100	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-22-0324A.038.MSD, Parent Sample ID: MT4-22-0324A.037.MS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:06, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		106	75	125	0	20
Chromium		102	75	125	0	20
Copper		97	75	125	1	20
Lead		98	75	125	2	20
Selenium		109	75	125	1	20

Metals, Prep Batch ID: MTD-032422-1 (continued)

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Matrix Spike Duplicate (MSD) (continued)

Lab Sample ID: MT4-22-0324A.038.MSD, Parent Sample ID: MT4-22-0324A.037.MS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:06, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Zinc		104	75	125	2	20

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-22-0324A.059.MSD, Parent Sample ID: MT4-22-0324A.058.MS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:41, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Chromium		104	75	125	6	20
Copper		98	75	125	5	20
Zinc		100	75	125	1	20

Organics - Volatiles, Prep Batch ID: VF220318W2

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK)

Lab Sample ID: 220318A9.BLKW18X

Run in Batch: 220318A9, Run Date: 03/18/2022 19:29, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Diethyl ether		ND	1.00	ug/l
Acetone		ND	10.00	ug/l
Methyl iodide		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Acrylonitrile		ND	1.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Tetrahydrofuran		ND	10.00	ug/l
Chloroform		ND	1.00	ug/l
Bromochloromethane		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
2-Hexanone		ND	10.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Benzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Dibromomethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
trans-1,4-Dichloro-2-butene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
1,1,1,2-Tetrachloroethane		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l

Organics - Volatiles, Prep Batch ID: VF220318W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Blank (BLK) (continued)

Lab Sample ID: 220318A9.BLKW18X

Run in Batch: 220318A9, Run Date: 03/18/2022 19:29, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Bromoform		ND	1.00	ug/l
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
1,2,3-Trichloropropane		ND	1.00	ug/l
n-Propylbenzene		ND	1.00	ug/l
Bromobenzene		ND	1.00	ug/l
1,3,5-Trimethylbenzene		ND	1.00	ug/l
tert-Butylbenzene		ND	1.00	ug/l
1,2,4-Trimethylbenzene		ND	1.00	ug/l
sec-Butylbenzene		ND	1.00	ug/l
p-Isopropyltoluene		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2,3-Trimethylbenzene		ND	1.00	ug/l
n-Butylbenzene		ND	1.00	ug/l
Hexachloroethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
1,2,3-Trichlorobenzene		ND	1.00	ug/l
Naphthalene		ND	1.00	ug/l
2-Methylnaphthalene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220318A9.LCSW18A

Run in Batch: 220318A9, Run Date: 03/18/2022 17:18, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Diethyl ether		94.0	67.4	121.2
Acetone		90.9	29.9	161.5
Methyl iodide		94.5	68.8	116.4
Carbon disulfide		93.4	63.8	137.4
tert-Methyl butyl ether (MTBE)		90.0	73.2	122.4
Acrylonitrile		99.1	69.9	128.9
2-Butanone (MEK)		95.4	44.0	134.4
Dichlorodifluoromethane		92.8	10.0	222.8
Chloromethane		87.1	23.8	166.5
Vinyl chloride		80.7	43.5	149.1
Bromomethane		81.2	56.8	151.3
Chloroethane		71.8	53.4	149.4
Trichlorofluoromethane		87.0	59.7	151.8
1,1-Dichloroethene		92.9	69.6	139.4
Methylene chloride		89.2	73.3	121.1
trans-1,2-Dichloroethene		89.6	73.6	129.3
1,1-Dichloroethane		90.4	71.5	126.2
cis-1,2-Dichloroethene		89.4	76.6	122.1
Tetrahydrofuran		99.3	59.0	117.9
Chloroform		91.1	78.4	124.0

Organics - Volatiles, Prep Batch ID: VF220318W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220318A9.LCSW18A

Run in Batch: 220318A9, Run Date: 03/18/2022 17:18, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Bromochloromethane		91.2	78.2	120.8
1,1,1-Trichloroethane		94.2	79.4	130.9
4-Methyl-2-pentanone (MIBK)		96.6	71.6	125.2
2-Hexanone		97.9	55.4	136.9
Carbon tetrachloride		92.4	72.6	133.0
Benzene		87.8	79.9	124.9
1,2-Dichloroethane		84.3	76.0	126.3
Trichloroethene		93.1	79.7	124.2
1,2-Dichloropropane		85.8	78.6	126.4
Bromodichloromethane		90.8	80.4	128.2
Dibromomethane		96.7	76.9	122.1
cis-1,3-Dichloropropene		93.9	79.8	129.9
Toluene		89.2	79.8	124.5
trans-1,3-Dichloropropene		104.0	74.0	131.3
1,1,2-Trichloroethane		88.8	78.7	123.1
Tetrachloroethene		101.3	74.5	124.5
trans-1,4-Dichloro-2-butene		91.7	68.6	135.4
Dibromochloromethane		100.2	74.6	127.2
1,2-Dibromoethane		101.5	70.3	133.7
Chlorobenzene		97.2	79.2	122.7
1,1,1,2-Tetrachloroethane		97.5	80.3	128.2
Ethylbenzene		101.4	79.5	129.1
p,m-Xylene		109.9	79.4	132.2
o-Xylene		112.8	80.2	131.0
Styrene		88.2	69.5	126.7
Isopropylbenzene		108.6	74.4	121.5
Bromoform		100.8	69.4	128.0
1,1,2,2-Tetrachloroethane		100.6	79.8	126.3
1,2,3-Trichloropropane		95.7	78.3	138.8
n-Propylbenzene		107.2	82.0	130.7
Bromobenzene		98.3	78.7	124.6
1,3,5-Trimethylbenzene		110.5	81.3	128.9
tert-Butylbenzene		113.4	80.7	128.9
1,2,4-Trimethylbenzene		94.8	81.4	130.8
sec-Butylbenzene		102.3	77.4	129.8
p-Isopropyltoluene		107.8	79.8	137.5
1,3-Dichlorobenzene		107.0	77.0	131.3
1,4-Dichlorobenzene		101.9	20.7	137.7
1,2-Dichlorobenzene		101.1	10.0	166.2
1,2,3-Trimethylbenzene		104.1	76.3	124.2
n-Butylbenzene		102.0	80.0	133.3
Hexachloroethane		88.3	23.8	138.1
1,2-Dibromo-3-chloropropane		127.5	21.2	189.4
1,2,4-Trichlorobenzene		116.3	27.4	143.4
1,2,3-Trichlorobenzene		112.7	75.4	131.4
Naphthalene		87.1	32.9	135.8

Organics - Volatiles, Prep Batch ID: VF220318W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220318A9.LCSW18A

Run in Batch: 220318A9, Run Date: 03/18/2022 17:18, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
2-Methylnaphthalene		84.1	25.5	165.5

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220318A9.LCSDW18A, Parent Sample ID: 220318A9.LCSW18A

Run in Batch: 220318A9, Run Date: 03/18/2022 17:37, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Diethyl ether		96.3	67.4	121.2	2.4	30.0
Acetone		93.5	29.9	161.5	2.9	30.0
Methyl iodide		95.9	68.8	116.4	1.5	30.0
Carbon disulfide		91.1	63.8	137.4	2.4	30.0
tert-Methyl butyl ether (MTBE)		91.3	73.2	122.4	1.5	30.0
Acrylonitrile		104.1	69.9	128.9	5.0	30.0
2-Butanone (MEK)		99.1	44.0	134.4	3.8	30.0
Dichlorodifluoromethane		95.8	10.0	222.8	3.2	30.0
Chloromethane		85.6	23.8	166.5	1.7	30.0
Vinyl chloride		80.5	43.5	149.1	0.3	30.0
Bromomethane		86.5	56.8	151.3	6.2	30.0
Chloroethane		79.1	53.4	149.4	9.7	30.0
Trichlorofluoromethane		87.0	59.7	151.8	0.1	30.0
1,1-Dichloroethene		91.6	69.6	139.4	1.5	30.0
Methylene chloride		90.7	73.3	121.1	1.6	30.0
trans-1,2-Dichloroethene		90.6	73.6	129.3	1.2	30.0
1,1-Dichloroethane		91.4	71.5	126.2	1.0	30.0
cis-1,2-Dichloroethene		91.0	76.6	122.1	1.8	30.0
Tetrahydrofuran		101.2	59.0	117.9	1.9	30.0
Chloroform		91.8	78.4	124.0	0.7	30.0
Bromochloromethane		92.1	78.2	120.8	1.0	30.0
1,1,1-Trichloroethane		91.8	79.4	130.9	2.6	30.0
4-Methyl-2-pentanone (MIBK)		100.2	71.6	125.2	3.6	30.0
2-Hexanone		98.6	55.4	136.9	0.7	30.0
Carbon tetrachloride		90.1	72.6	133.0	2.5	30.0
Benzene		87.4	79.9	124.9	0.5	30.0
1,2-Dichloroethane		86.2	76.0	126.3	2.3	30.0
Trichloroethene		93.6	79.7	124.2	0.5	30.0
1,2-Dichloropropane		88.3	78.6	126.4	2.8	30.0
Bromodichloromethane		94.6	80.4	128.2	4.1	30.0
Dibromomethane		97.3	76.9	122.1	0.7	30.0
cis-1,3-Dichloropropene		97.4	79.8	129.9	3.7	30.0
Toluene		91.1	79.8	124.5	2.1	30.0
trans-1,3-Dichloropropene		107.4	74.0	131.3	3.2	30.0
1,1,2-Trichloroethane		92.5	78.7	123.1	4.2	30.0
Tetrachloroethene		102.5	74.5	124.5	1.2	30.0
trans-1,4-Dichloro-2-butene		92.1	68.6	135.4	0.4	30.0
Dibromochloromethane		92.4	74.6	127.2	8.1	30.0
1,2-Dibromoethane		93.8	70.3	133.7	7.9	30.0
Chlorobenzene		89.8	79.2	122.7	7.9	30.0

Organics - Volatiles, Prep Batch ID: VF220318W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220318A9.LCSDW18A, Parent Sample ID: 220318A9.LCSW18A

Run in Batch: 220318A9, Run Date: 03/18/2022 17:37, Prep Date: 03/18/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,1,1,2-Tetrachloroethane		90.2	80.3	128.2	7.8	30.0
Ethylbenzene		90.4	79.5	129.1	11.5	30.0
p,m-Xylene		108.8	79.4	132.2	1.0	30.0
o-Xylene		110.3	80.2	131.0	2.3	30.0
Styrene		85.4	69.5	126.7	3.2	30.0
Isopropylbenzene		102.1	74.4	121.5	6.1	30.0
Bromoform		105.6	69.4	128.0	4.6	30.0
1,1,2,2-Tetrachloroethane		95.3	79.8	126.3	5.4	30.0
1,2,3-Trichloropropane		98.9	78.3	138.8	3.2	30.0
n-Propylbenzene		106.7	82.0	130.7	0.4	30.0
Bromobenzene		98.5	78.7	124.6	0.2	30.0
1,3,5-Trimethylbenzene		107.0	81.3	128.9	3.3	30.0
tert-Butylbenzene		107.7	80.7	128.9	5.2	30.0
1,2,4-Trimethylbenzene		86.5	81.4	130.8	9.2	30.0
sec-Butylbenzene		96.7	77.4	129.8	5.7	30.0
p-Isopropyltoluene		100.7	79.8	137.5	6.8	30.0
1,3-Dichlorobenzene		106.1	77.0	131.3	0.8	30.0
1,4-Dichlorobenzene		101.8	20.7	137.7	0.1	30.0
1,2-Dichlorobenzene		97.9	10.0	166.2	3.2	30.0
1,2,3-Trimethylbenzene		102.1	76.3	124.2	1.9	30.0
n-Butylbenzene		100.1	80.0	133.3	1.9	30.0
Hexachloroethane		87.9	23.8	138.1	0.5	30.0
1,2-Dibromo-3-chloropropane		127.0	21.2	189.4	0.3	30.0
1,2,4-Trichlorobenzene		117.8	27.4	143.4	1.2	30.0
1,2,3-Trichlorobenzene		117.4	75.4	131.4	4.1	30.0
Naphthalene		85.1	32.9	135.8	2.3	30.0
2-Methylnaphthalene		93.3	25.5	165.5	10.4	30.0

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # _____ OF _____

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Rodney Abke
COMPANY: Applied EcoSystems
ADDRESS: G-4300 South Saginaw Street
CITY: Burton STATE: MI ZIP CODE: 48529
PHONE NO.: 810-715-2525 FAX NO.: 810-715-2526 P.O. NO.: PO795930
E-MAIL ADDRESS: rabke@appliedecosystems.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Monica Wallingford ☐SAME
COMPANY: Revitalizing Auto Communities Environmental Response (RACER) Trust
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: 313.486.2978 E-MAIL ADDRESS: mwallingford@racertrust.org

PROJECT NO./NAME: RACER Flint West #12990 SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐1 DAY ☐2 DAYS ☐3 DAYS ☒STANDARD ☐OTHER _____

DELIVERABLES REQUIRED ☐STD ☒LEVEL II ☐LEVEL III ☐LEVEL IV ☐EDD ☒OTHER report to MDLs

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications: ☐OHIO VAP ☐Drinking Water ☐DoD ☐NPDES
Project Locations: ☐Detroit ☐New York ☐Other _____
Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	VOCs	Metals, dissolved*	Metals, Total*	Special Instructions
33914.01	3-16	9:09	FB-1	W	6	X	X	X					X	X	X	* - Metals list incldues:
.02	3-16	~~10:21~~	9:49 MW-104S-31622	W	6	X	X	X					X	X	X	Ar, Cr-total, CR-Hex, Cu
.03	3-16	10:24	MW-106SR-31622	W	5		X	X					X		X	Pb, Se, Zn
.03-~~04~~	3-16	10:34	MW-106SR-31622	W	1	X								X		
.04-~~05~~	3-16	11:05	MW-112S-31622	W	6	X	X	X					X	X	X	report down to MCLs
.05-~~06~~	3-16	11:56	MW-103-31622	W	6	X	X	X					X	X	X	
.06-~~07~~	3-16	12:42	MW-108S-31622	W	6	X	X	X					X	X	X	
.07-~~08~~	3-16	13:01	MW-114S-31622	W	6	X	X	X					X	X	X	
.08-~~09~~ PD	3-16	14:16	MW-117-31622	W	6	X	X	X					X	X	X	
.09-~~10~~	3-16	—	Dup-131622	W	6	X	X	X					X	X	X	

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Joshua Hendrickson/AE ☐Sampler DATE: 3-16-22 TIME: 18:20
RECEIVED BY: SIGNATURE/ORGANIZATION: AE DATE: 3.16.22 TIME: 14:20
RELINQUISHED BY: SIGNATURE/ORGANIZATION: AE DATE: 3-16-22 TIME: 21:35
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 3/16/22 TIME: 1435

RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: 3/16/22 TIME: 1335
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 3/16/22 TIME: 1525

SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS
SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS

NOTES: TEMP. ON ARRIVAL: 2.8

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Quality Control Report

Report ID: QC-S33923-01
Generated on 04/06/2022

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S33923.01-S33923.07
Project: RACER Flint West #12990
Submitted Date/Time: 03/16/2022 15:25
Sampled by: Unkown
P.O. #: 795930

QC Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S33923.01
Sample Tag: FB-1
Collected Date/Time: 03/16/2022 09:09
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/23/22 14:23	AK220323	PF220321W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33923.02
Sample Tag: MW-106SR-31622
Collected Date/Time: 03/16/2022 10:24
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/23/22 14:43	AK220323	PF220321W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33923.03
Sample Tag: MW-112S-31622
Collected Date/Time: 03/16/2022 11:03
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/24/22 13:42	AK220324	PF220321W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33923.04
Sample Tag: MW-110S-31622
Collected Date/Time: 03/16/2022 11:56
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/23/22 15:22	AK220323	PF220321W2	Yes	BLK/LCS/LCSD/MS/MS

Lab Sample ID: S33923.05
Sample Tag: MW-114S-31622
Collected Date/Time: 03/16/2022 13:24
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/23/22 15:41	AK220323	PF220321W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33923.06
Sample Tag: MW-117S-31622
Collected Date/Time: 03/16/2022 14:16
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/23/22 16:01	AK220323	PF220321W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33923.07
Sample Tag: DUP-01
Collected Date/Time: 03/16/2022 00:01
Matrix: Water
COC Reference:

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/23/22 16:20	AK220323	PF220321W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF220321W2

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33923.01	28 PFAs	ASTMD7979-19M	03/23/22 14:23	AK220323
S33923.02	28 PFAs	ASTMD7979-19M	03/23/22 14:43	AK220323
S33923.03	28 PFAs	ASTMD7979-19M	03/24/22 13:42	AK220324
S33923.04	28 PFAs	ASTMD7979-19M	03/23/22 15:22	AK220323
S33923.05	28 PFAs	ASTMD7979-19M	03/23/22 15:41	AK220323
S33923.06	28 PFAs	ASTMD7979-19M	03/23/22 16:01	AK220323
S33923.07	28 PFAs	ASTMD7979-19M	03/23/22 16:20	AK220323

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33923.01

Sample Tag: FB-1

Collected Date/Time: 03/16/2022 09:09

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220323, Run Date: 03/23/2022 14:23, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**102.2**	50.0	150.0
M2-6:2FTSA		**94.9**	50.0	150.0
M2-8:2FTSA		**99.0**	50.0	150.0
M2PFTeDA		**110.6**	12.0	218.0
M3PFBS		**110.5**	50.0	150.0
M3PFHxS		**110.8**	50.0	150.0
M4PFHpA		**107.9**	50.0	150.0
M5PFHxA		**99.4**	50.0	150.0
M5PFPeA		**105.1**	50.0	150.0
M6PFDA		**88.8**	50.0	150.0
M7PFUnDA		**95.9**	50.0	150.0
M8FOSA		**101.5**	50.0	150.0
M8PFOA		**95.1**	50.0	150.0
M8PFOS		**118.3**	50.0	150.0
M9-PFNA		**92.0**	50.0	150.0
MPFBA		**103.6**	50.0	150.0
MPFDoDA		**90.5**	50.0	150.0
d3N-MeFOSAA		**107.7**	50.0	150.0
d5EtFOSAA		**112.7**	50.0	150.0
MHFPO-DA		**85.3**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33923.02

Sample Tag: MW-106SR-31622

Collected Date/Time: 03/16/2022 10:24

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220323, Run Date: 03/23/2022 14:43, Matrix: WW, Dilution: 1.94

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**102.4**	50.0	150.0
M2-6:2FTSA		**88.8**	50.0	150.0
M2-8:2FTSA		**106.2**	50.0	150.0
M2PFTeDA		**116.9**	12.0	218.0
M3PFBS		**108.5**	50.0	150.0
M3PFHxS		**111.3**	50.0	150.0
M4PFHpA		**103.0**	50.0	150.0
M5PFHxA		**102.5**	50.0	150.0
M5PFPeA		**105.4**	50.0	150.0
M6PFDA		**102.9**	50.0	150.0
M7PFUnDA		**98.2**	50.0	150.0
M8FOSA		**114.0**	50.0	150.0
M8PFOA		**93.9**	50.0	150.0
M8PFOS		**104.6**	50.0	150.0
M9-PFNA		**102.1**	50.0	150.0
MPFBA		**108.7**	50.0	150.0
MPFDoDA		**90.7**	50.0	150.0
d3N-MeFOSAA		**102.2**	50.0	150.0
d5EtFOSAA		**107.3**	50.0	150.0
MHFPO-DA		**78.4**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33923.03

Sample Tag: MW-112S-31622

Collected Date/Time: 03/16/2022 11:03

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220324, Run Date: 03/24/2022 13:42, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	**267.7**	50.0	150.0
M2-6:2FTSA	*	**182.4**	50.0	150.0
M2-8:2FTSA	*	**244.4**	50.0	150.0
M2PFTeDA		**172.8**	12.0	218.0
M3PFBS		**97.6**	50.0	150.0
M3PFHxS		**97.5**	50.0	150.0
M4PFHpA		**94.3**	50.0	150.0
M5PFHxA		**100.9**	50.0	150.0
M5PFPeA		**113.2**	50.0	150.0
M6PFDA		**101.7**	50.0	150.0
M7PFUnDA		**127.6**	50.0	150.0
M8FOSA		**116.0**	50.0	150.0
M8PFOA		**105.8**	50.0	150.0
M8PFOS		**101.2**	50.0	150.0
M9-PFNA		**89.2**	50.0	150.0
MPFBA		**109.4**	50.0	150.0
MPFDoDA		**127.7**	50.0	150.0
d3N-MeFOSAA		**149.9**	50.0	150.0
d5EtFOSAA		**119.9**	50.0	150.0
MHFPO-DA		**94.3**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33923.04

Sample Tag: MW-110S-31622

Collected Date/Time: 03/16/2022 11:56

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220323, Run Date: 03/23/2022 15:22, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**106.8**	50.0	150.0
M2-6:2FTSA		**94.5**	50.0	150.0
M2-8:2FTSA		**109.9**	50.0	150.0
M2PFTeDA		**121.6**	12.0	218.0
M3PFBS		**104.9**	50.0	150.0
M3PFHxS		**112.0**	50.0	150.0
M4PFHpA		**97.6**	50.0	150.0
M5PFHxA		**94.8**	50.0	150.0
M5PFPeA		**105.5**	50.0	150.0
M6PFDA		**95.1**	50.0	150.0
M7PFUnDA		**96.9**	50.0	150.0
M8FOSA		**103.5**	50.0	150.0
M8PFOA		**86.0**	50.0	150.0
M8PFOS		**109.7**	50.0	150.0
M9-PFNA		**103.8**	50.0	150.0
MPFBA		**106.5**	50.0	150.0
MPFDoDA		**93.2**	50.0	150.0
d3N-MeFOSAA		**117.1**	50.0	150.0
d5EtFOSAA		**110.3**	50.0	150.0
MHFPO-DA		**86.0**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33923.05

Sample Tag: MW-114S-31622

Collected Date/Time: 03/16/2022 13:24

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220323, Run Date: 03/23/2022 15:41, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**116.6**	50.0	150.0
M2-6:2FTSA		**110.6**	50.0	150.0
M2-8:2FTSA		**110.6**	50.0	150.0
M2PFTeDA		**142.3**	12.0	218.0
M3PFBS		**109.4**	50.0	150.0
M3PFHxS		**103.4**	50.0	150.0
M4PFHpA		**100.7**	50.0	150.0
M5PFHxA		**95.5**	50.0	150.0
M5PFPeA		**107.8**	50.0	150.0
M6PFDA		**108.0**	50.0	150.0
M7PFUnDA		**105.7**	50.0	150.0
M8FOSA		**104.5**	50.0	150.0
M8PFOA		**89.8**	50.0	150.0
M8PFOS		**111.1**	50.0	150.0
M9-PFNA		**98.3**	50.0	150.0
MPFBA		**104.0**	50.0	150.0
MPFDoDA		**96.7**	50.0	150.0
d3N-MeFOSAA		**110.5**	50.0	150.0
d5EtFOSAA		**116.9**	50.0	150.0
MHFPO-DA		**85.9**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33923.06

Sample Tag: MW-117S-31622

Collected Date/Time: 03/16/2022 14:16

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220323, Run Date: 03/23/2022 16:01, Matrix: WW, Dilution: 2.02

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**104.6**	50.0	150.0
M2-6:2FTSA		**100.0**	50.0	150.0
M2-8:2FTSA		**101.9**	50.0	150.0
M2PFTeDA		**150.9**	12.0	218.0
M3PFBS		**110.1**	50.0	150.0
M3PFHxS		**102.4**	50.0	150.0
M4PFHpA		**90.6**	50.0	150.0
M5PFHxA		**97.9**	50.0	150.0
M5PFPeA		**105.6**	50.0	150.0
M6PFDA		**101.3**	50.0	150.0
M7PFUnDA		**92.1**	50.0	150.0
M8FOSA		**98.5**	50.0	150.0
M8PFOA		**90.0**	50.0	150.0
M8PFOS		**109.8**	50.0	150.0
M9-PFNA		**90.6**	50.0	150.0
MPFBA		**104.2**	50.0	150.0
MPFDoDA		**95.8**	50.0	150.0
d3N-MeFOSAA		**109.5**	50.0	150.0
d5EtFOSAA		**102.6**	50.0	150.0
MHFPO-DA		**82.4**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33923.07

Sample Tag: DUP-01

Collected Date/Time: 03/16/2022 00:01

Matrix: Water

COC Reference:

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220323, Run Date: 03/23/2022 16:20, Matrix: WW, Dilution: 2.05

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**132.2**	50.0	150.0
M2-6:2FTSA		**103.0**	50.0	150.0
M2-8:2FTSA		**109.6**	50.0	150.0
M2PFTeDA		**177.2**	12.0	218.0
M3PFBS		**116.4**	50.0	150.0
M3PFHxS		**113.3**	50.0	150.0
M4PFHpA		**104.2**	50.0	150.0
M5PFHxA		**105.4**	50.0	150.0
M5PFPeA		**110.8**	50.0	150.0
M6PFDA		**107.7**	50.0	150.0
M7PFUnDA		**106.9**	50.0	150.0
M8FOSA		**117.6**	50.0	150.0
M8PFOA		**100.9**	50.0	150.0
M8PFOS		**122.5**	50.0	150.0
M9-PFNA		**92.9**	50.0	150.0
MPFBA		**113.0**	50.0	150.0
MPFDoDA		**113.8**	50.0	150.0
d3N-MeFOSAA		**127.3**	50.0	150.0
d5EtFOSAA		**115.8**	50.0	150.0
MHFPO-DA		**87.5**	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF220321W2

QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK)

Lab Sample ID: AK220323.BLK220321B

Run in Batch: AK220323, Run Date: 03/23/2022 12:46, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**104.6**	50.0	150.0
M2-6:2FTSA		**103.4**	50.0	150.0
M2-8:2FTSA		**108.5**	50.0	150.0
M2PFTeDA		**81.0**	12.0	218.0
M3PFBS		**111.0**	50.0	150.0
M3PFHxS		**109.4**	50.0	150.0
M4PFHpA		**91.2**	50.0	150.0
M5PFHxA		**95.5**	50.0	150.0
M5PFPeA		**101.9**	50.0	150.0
M6PFDA		**93.2**	50.0	150.0
M7PFUnDA		**95.5**	50.0	150.0
M8FOSA		**99.0**	50.0	150.0
M8PFOA		**86.5**	50.0	150.0
M8PFOS		**102.6**	50.0	150.0
M9-PFNA		**94.3**	50.0	150.0
MPFBA		**102.9**	50.0	150.0
MPFDoDA		**82.7**	50.0	150.0
d3N-MeFOSAA		**112.4**	50.0	150.0
d5EtFOSAA		**109.5**	50.0	150.0
MHFPO-DA		**86.6**	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK220323.LCS220321B

Run in Batch: AK220323, Run Date: 03/23/2022 12:07, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**100.5**	50.0	150.0
M2-6:2FTSA		**88.1**	50.0	150.0
M2-8:2FTSA		**89.7**	50.0	150.0
M2PFTeDA		**114.4**	12.0	218.0
M3PFBS		**105.8**	50.0	150.0
M3PFHxS		**93.5**	50.0	150.0
M4PFHpA		**98.8**	50.0	150.0
M5PFHxA		**93.1**	50.0	150.0
M5PFPeA		**100.2**	50.0	150.0
M6PFDA		**96.9**	50.0	150.0
M7PFUnDA		**94.7**	50.0	150.0
M8FOSA		**96.7**	50.0	150.0
M8PFOA		**89.8**	50.0	150.0
M8PFOS		**98.2**	50.0	150.0
M9-PFNA		**96.2**	50.0	150.0
MPFBA		**98.6**	50.0	150.0
MPFDoDA		**94.9**	50.0	150.0
d3N-MeFOSAA		**119.1**	50.0	150.0
d5EtFOSAA		**108.0**	50.0	150.0
MHFPO-DA		**83.0**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220323.LCSD220321B, Parent Sample ID: AK220323.LCS220321B

Run in Batch: AK220323, Run Date: 03/23/2022 12:26, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**100.0**	50.0	150.0
M2-6:2FTSA		**102.0**	50.0	150.0
M2-8:2FTSA		**108.0**	50.0	150.0
M2PFTeDA		**117.2**	12.0	218.0
M3PFBS		**107.0**	50.0	150.0
M3PFHxS		**98.7**	50.0	150.0
M4PFHpA		**108.9**	50.0	150.0
M5PFHxA		**98.2**	50.0	150.0
M5PFPeA		**99.7**	50.0	150.0
M6PFDA		**89.5**	50.0	150.0
M7PFUnDA		**101.7**	50.0	150.0
M8FOSA		**106.9**	50.0	150.0
M8PFOA		**90.7**	50.0	150.0
M8PFOS		**98.6**	50.0	150.0
M9-PFNA		**101.0**	50.0	150.0
MPFBA		**101.6**	50.0	150.0
MPFDoDA		**97.0**	50.0	150.0
d3N-MeFOSAA		**97.3**	50.0	150.0
d5EtFOSAA		**106.2**	50.0	150.0
MHFPO-DA		**82.6**	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK220323.3393102M, Parent Sample ID: S33931.01

Run in Batch: AK220323, Run Date: 03/23/2022 16:59, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1.99

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**105.9**	50.0	150.0
M2-6:2FTSA		**104.3**	50.0	150.0
M2-8:2FTSA		**112.2**	50.0	150.0
M2PFTeDA		**119.3**	12.0	218.0
M3PFBS		**112.8**	50.0	150.0
M3PFHxS		**106.1**	50.0	150.0
M4PFHpA		**98.8**	50.0	150.0
M5PFHxA		**101.4**	50.0	150.0
M5PFPeA		**103.6**	50.0	150.0
M6PFDA		**102.0**	50.0	150.0
M7PFUnDA		**103.2**	50.0	150.0
M8FOSA		**101.6**	50.0	150.0
M8PFOA		**90.1**	50.0	150.0
M8PFOS		**117.5**	50.0	150.0
M9-PFNA		**92.6**	50.0	150.0
MPFBA		**107.7**	50.0	150.0
MPFDoDA		**93.9**	50.0	150.0
d3N-MeFOSAA		**118.4**	50.0	150.0
d5EtFOSAA		**119.4**	50.0	150.0
MHFPO-DA		**92.2**	50.0	150.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: AK220323.3393103N, Parent Sample ID: AK220323.3393102M

Run in Batch: AK220323, Run Date: 03/23/2022 17:19, Prep Date: 03/21/2022, Matrix: WW, Dilution: 2.03

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**104.4**	50.0	150.0
M2-6:2FTSA		**106.7**	50.0	150.0
M2-8:2FTSA		**106.1**	50.0	150.0
M2PFTeDA		**174.5**	12.0	218.0
M3PFBS		**113.3**	50.0	150.0
M3PFHxS		**112.7**	50.0	150.0
M4PFHpA		**98.1**	50.0	150.0
M5PFHxA		**100.2**	50.0	150.0
M5PFPeA		**105.0**	50.0	150.0
M6PFDA		**113.7**	50.0	150.0
M7PFUnDA		**102.7**	50.0	150.0
M8FOSA		**106.3**	50.0	150.0
M8PFOA		**92.4**	50.0	150.0
M8PFOS		**105.1**	50.0	150.0
M9-PFNA		**97.2**	50.0	150.0
MPFBA		**106.0**	50.0	150.0
MPFDoDA		**103.3**	50.0	150.0
d3N-MeFOSAA		**105.2**	50.0	150.0
d5EtFOSAA		**122.1**	50.0	150.0
MHFPO-DA		**90.0**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF220321W2

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK)

Lab Sample ID: AK220323.BLK220321B

Run in Batch: AK220323, Run Date: 03/23/2022 12:46, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBSA		ND	1	ng/l
PFECHS		ND	1	ng/l
PFHxSA		ND	1	ng/l
PFBA		ND	5	ng/l
PFPeA		ND	2	ng/l
4:2 FTSA		ND	1	ng/l
PFHxA		ND	1	ng/l
PFBS		ND	1	ng/l
PFHpA		ND	1	ng/l
PFPeS		ND	1	ng/l
6:2 FTSA		ND	1	ng/l
PFOA		ND	1	ng/l
PFHxS		ND	1	ng/l
PFHxS-LN		ND	1	ng/l
PFHxS-BR		ND	1	ng/l
PFNA		ND	1	ng/l
8:2 FTSA		ND	1	ng/l
PFHpS		ND	1	ng/l
PFDA		ND	1	ng/l
N-MeFOSAA		ND	1	ng/l
EtFOSAA		ND	2	ng/l
PFOS		ND	1	ng/l
PFOS-LN		ND	1	ng/l
PFOS-BR		ND	1	ng/l
PFUnDA		ND	1	ng/l
PFNS		ND	1	ng/l
PFDoDA		ND	1	ng/l
PFDS		ND	1	ng/l
PFTrDA		ND	1	ng/l
FOSA		ND	1	ng/l
PFTeDA		ND	2	ng/l
11CL-PF3OUdS		ND	1	ng/l
9CL-PF3ONS		ND	1	ng/l
ADONA		ND	1	ng/l
HFPO-DA		ND	1	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK220323.LCS220321B

Run in Batch: AK220323, Run Date: 03/23/2022 12:07, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		102.8	70.0	130.0
PFPeA		101.0	70.0	130.0
4:2 FTSA		96.4	70.0	130.0
PFHxA		112.4	70.0	130.0
PFBS		103.2	70.0	130.0
HFPO-DA		93.6	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF220321W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK220323.LCS220321B

Run in Batch: AK220323, Run Date: 03/23/2022 12:07, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFHpA		102.2	70.0	130.0
PFPeS		112.6	70.0	130.0
ADONA		92.8	70.0	130.0
6:2 FTSA		116.0	70.0	130.0
PFBSA		99.6	70.0	130.0
PFOA		109.2	70.0	130.0
PFHxS		106.8	70.0	130.0
PFNA		94.6	70.0	130.0
PFECHS		107.4	70.0	130.0
8:2 FTSA		102.2	70.0	130.0
PFHpS		106.8	70.0	130.0
N-MeFOSAA		89.6	70.0	130.0
PFDA		90.4	70.0	130.0
EtFOSAA		107.0	70.0	130.0
PFOS		116.8	70.0	130.0
PFHxSA		101.2	70.0	130.0
PFUnDA		111.0	70.0	130.0
9CL-PF3ONS		114.4	70.0	130.0
PFNS		114.2	70.0	130.0
PFDoDA		102.4	70.0	130.0
PFDS		123.0	70.0	130.0
PFTrDA		110.2	70.0	130.0
FOSA		110.0	70.0	130.0
11CL-PF3OUdS		112.8	70.0	130.0
PFTeDA		120.0	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220323.LCSD220321B, Parent Sample ID: AK220323.LCS220321B

Run in Batch: AK220323, Run Date: 03/23/2022 12:26, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		101.0	70.0	130.0	1.8	30.0
PFPeA		104.0	70.0	130.0	2.9	30.0
4:2 FTSA		97.4	70.0	130.0	1.0	30.0
PFHxA		101.6	70.0	130.0	10.1	30.0
PFBS		105.8	70.0	130.0	2.5	30.0
HFPO-DA		89.2	70.0	130.0	4.8	30.0
PFHpA		88.8	70.0	130.0	14.0	30.0
PFPeS		108.0	70.0	130.0	4.2	30.0
ADONA		99.2	70.0	130.0	6.7	30.0
6:2 FTSA		95.4	70.0	130.0	19.5	30.0
PFBSA		94.4	70.0	130.0	5.4	30.0
PFOA		102.4	70.0	130.0	6.4	30.0
PFHxS		101.8	70.0	130.0	4.8	30.0
PFNA		88.8	70.0	130.0	6.3	30.0
PFECHS		99.6	70.0	130.0	7.5	30.0
8:2 FTSA		90.0	70.0	130.0	12.7	30.0

Organics - Volatiles, Prep Batch ID: PF220321W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK220323.LCSD220321B, Parent Sample ID: AK220323.LCS220321B

Run in Batch: AK220323, Run Date: 03/23/2022 12:26, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFHpS		92.8	70.0	130.0	14.0	30.0
N-MeFOSAA		115.4	70.0	130.0	25.2	30.0
PFDA		112.2	70.0	130.0	21.5	30.0
EtFOSAA		106.0	70.0	130.0	0.9	30.0
PFOS		99.4	70.0	130.0	16.1	30.0
PFHxSA		94.6	70.0	130.0	6.7	30.0
PFUnDA		104.0	70.0	130.0	6.5	30.0
9CL-PF3ONS		122.6	70.0	130.0	6.9	30.0
PFNS		118.0	70.0	130.0	3.3	30.0
PFDoDA		93.2	70.0	130.0	9.4	30.0
PFDS		117.2	70.0	130.0	4.8	30.0
PFTrDA		110.4	70.0	130.0	0.2	30.0
FOSA		102.2	70.0	130.0	7.4	30.0
11CL-PF3OUdS		109.2	70.0	130.0	3.2	30.0
PFTeDA		118.2	70.0	130.0	1.5	30.0

Matrix Spike (MS)

Lab Sample ID: AK220323.3393102M, Parent Sample ID: S33931.01

Run in Batch: AK220323, Run Date: 03/23/2022 16:59, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1.99

Analyte	Flags	% Rec	LCL	UCL
PFBA		100.5	70.0	130.0
PFPeA		110.6	70.0	130.0
4:2 FTSA		99.5	70.0	130.0
PFHxA		99.5	70.0	130.0
PFBS		100.5	70.0	130.0
PFHpA		92.5	70.0	130.0
PFPeS		120.6	70.0	130.0
6:2 FTSA		100.5	70.0	130.0
PFOA		110.6	70.0	130.0
PFHxS		92.5	70.0	130.0
PFNA		110.6	70.0	130.0
8:2 FTSA		110.6	70.0	130.0
PFHpS		100.5	70.0	130.0
PFDA		95.5	70.0	130.0
N-MeFOSAA		92.5	70.0	130.0
EtFOSAA		99.5	70.0	130.0
PFOS		91.9	70.0	130.0
PFUnDA		110.6	70.0	130.0
PFNS		100.5	70.0	130.0
PFDoDA		99.5	70.0	130.0
PFDS		100.5	70.0	130.0
PFTrDA		99.5	70.0	130.0
FOSA		110.6	70.0	130.0
PFTeDA		120.6	70.0	130.0
11CL-PF3OUdS		94.5	70.0	130.0
9CL-PF3ONS		99.5	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF220321W2 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Matrix Spike (MS) (continued)

Lab Sample ID: AK220323.3393102M, Parent Sample ID: S33931.01

Run in Batch: AK220323, Run Date: 03/23/2022 16:59, Prep Date: 03/21/2022, Matrix: WW, Dilution: 1.99

Analyte	Flags	% Rec	LCL	UCL
ADONA		95.5	70.0	130.0
HFPO-DA		99.5	70.0	130.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: AK220323.3393103N, Parent Sample ID: AK220323.3393102M

Run in Batch: AK220323, Run Date: 03/23/2022 17:19, Prep Date: 03/21/2022, Matrix: WW, Dilution: 2.03

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		107.8	70.0	130.0	9.5	30.0
PFPeA		98.0	70.0	130.0	9.5	30.0
4:2 FTSA		98.0	70.0	130.0	1.0	30.0
PFHxA		107.8	70.0	130.0	10.5	30.0
PFBS		98.0	70.0	130.0	0.0	30.0
PFHpA		97.1	70.0	130.0	7.3	30.0
PFPeS		98.0	70.0	130.0	18.2	30.0
6:2 FTSA		91.2	70.0	130.0	7.3	30.0
PFOA		96.1	70.0	130.0	11.5	30.0
PFHxS		88.2	70.0	130.0	2.2	30.0
PFNA		91.2	70.0	130.0	16.7	30.0
8:2 FTSA		90.2	70.0	130.0	17.8	30.0
PFHpS		91.2	70.0	130.0	7.3	30.0
PFDA		83.3	70.0	130.0	11.1	30.0
N-MeFOSAA		98.0	70.0	130.0	8.3	30.0
EtFOSAA		97.1	70.0	130.0	0.0	30.0
PFOS		104.3	70.0	130.0	14.6	30.0
PFUnDA		107.8	70.0	130.0	0.0	30.0
PFNS		107.8	70.0	130.0	9.5	30.0
PFDoDA		96.1	70.0	130.0	1.0	30.0
PFDS		117.6	70.0	130.0	18.2	30.0
PFTrDA		117.6	70.0	130.0	19.2	30.0
FOSA		98.0	70.0	130.0	9.5	30.0
PFTeDA		107.8	70.0	130.0	8.7	30.0
11CL-PF3OUdS		117.6	70.0	130.0	24.3	30.0
9CL-PF3ONS		117.6	70.0	130.0	19.2	30.0
ADONA		83.3	70.0	130.0	11.1	30.0
HFPO-DA		91.2	70.0	130.0	6.3	30.0

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # ______ OF ______

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME	Rodney Abke
COMPANY	Applied EcoSystems
ADDRESS	G-4300 South Saginaw Street
CITY	Burton
STATE	MI
ZIP CODE	48529
PHONE NO.	810-715-2525
FAX NO.	810-715-2526
P.O. NO.	PO795930
E-MAIL ADDRESS	rabke@appliedecosystems.com
QUOTE NO.	

INVOICE TO

CONTACT NAME	Monica Wallingford
☐ SAME	
COMPANY	Revitalizing Auto Communities Environmental Response (RACER) Trust
ADDRESS	
CITY	
STATE	
ZIP CODE	
PHONE NO.	313.486.2978
E-MAIL ADDRESS	mwallingford@racertrust.org

PROJECT NO./NAME: RACER Flint West #12990

SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER ______

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☒ OTHER report to MDLs

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS/PFOS **
3392301	3-16	9:09	FB-1	W	1	X							X
.02	3-16	10:24	mw-106SR-~~332~~ 31622	W	3	X							X
.03	3-16	11:03	mw-112S-31622	W	3	X							X
.04	3-16	11:54	mw-110S-31622	W	3	X							X
.05	3-16	13:24	mw-114S-31622	W	3	X							X
.06	3-16	14:16	mw-117S-31622	W	3	X							X

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other ______

Special Instructions:
**- 28 Compound List
report down to MDLs

		DATE	TIME		DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	[signature] ☒ Sampler	3-16	14:20	RELINQUISHED BY: SIGNATURE/ORGANIZATION [signature]	3/16/22	1325
RECEIVED BY: SIGNATURE/ORGANIZATION	[signature]	3-16-22	14:20	RECEIVED BY: SIGNATURE/ORGANIZATION [signature]	3/16/22	1525
RELINQUISHED BY: SIGNATURE/ORGANIZATION	[signature]	3-16-22	14:35	SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS	NOTES:	TEMP. ON ARRIVAL 2.8
RECEIVED BY: SIGNATURE/ORGANIZATION	[signature]	3/16/22	1435	SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Quality Control Report

Report ID: QC-S33939-01
Generated on 04/07/2022

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S33939.01-S33939.05
Project: RACER Flint West #12990
Submitted Date/Time: 03/17/2022 12:20
Sampled by: Unknown
P.O. #: 795930

QC Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S33939.01
Sample Tag: MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140627

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/24/22 15:40	AK220324	PF220323W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33939.02
Sample Tag: MS MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140627

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/25/22 09:31	AK220324	PF220323W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33939.03
Sample Tag: MSD MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140627

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/24/22 16:19	AK220324	PF220323W1	Yes	BLK/LCS/LCSD/MS/MS

Lab Sample ID: S33939.04

Sample Tag: EB-1-31622

Collected Date/Time: 03/16/2022 15:53

Matrix: Water

COC Reference: 140627

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/24/22 16:38	AK220324	PF220323W1	Yes	BLK/LCS/LCSD/MS/MS

Lab Sample ID: S33939.05

Sample Tag: Trip Blank

Collected Date/Time: 03/16/2022 00:01

Matrix: Water

COC Reference: 140627

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	03/24/22 16:58	AK220324	PF220323W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF220323W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33939.01	28 PFAs	ASTMD7979-19M	03/24/22 15:40	AK220324
S33939.02	28 PFAs	ASTMD7979-19M	03/25/22 09:31	AK220324
S33939.03	28 PFAs	ASTMD7979-19M	03/24/22 16:19	AK220324
S33939.04	28 PFAs	ASTMD7979-19M	03/24/22 16:38	AK220324
S33939.05	28 PFAs	ASTMD7979-19M	03/24/22 16:58	AK220324

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33939.01

Sample Tag: MW-103S-31622

Collected Date/Time: 03/16/2022 15:25

Matrix: Water

COC Reference: 140627

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220324, Run Date: 03/24/2022 15:40, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	**310.6**	50.0	150.0
M2-6:2FTSA	*	**188.5**	50.0	150.0
M2-8:2FTSA	*	**175.2**	50.0	150.0
M2PFTeDA		**127.7**	12.0	218.0
M3PFBS		**104.8**	50.0	150.0
M3PFHxS		**86.4**	50.0	150.0
M4PFHpA		**105.7**	50.0	150.0
M5PFHxA		**113.2**	50.0	150.0
M5PFPeA		**112.0**	50.0	150.0
M6PFDA		**111.9**	50.0	150.0
M7PFUnDA		**118.2**	50.0	150.0
M8FOSA		**104.9**	50.0	150.0
M8PFOA		**97.0**	50.0	150.0
M8PFOS		**104.5**	50.0	150.0
M9-PFNA		**132.1**	50.0	150.0
MPFBA		**107.0**	50.0	150.0
MPFDoDA		**116.0**	50.0	150.0
d3N-MeFOSAA		**143.4**	50.0	150.0
d5EtFOSAA		**134.1**	50.0	150.0
MHFPO-DA		**98.0**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33939.04

Sample Tag: EB-1-31622

Collected Date/Time: 03/16/2022 15:53

Matrix: Water

COC Reference: 140627

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220324, Run Date: 03/24/2022 16:38, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**116.1**	50.0	150.0
M2-6:2FTSA		**95.6**	50.0	150.0
M2-8:2FTSA		**132.1**	50.0	150.0
M2PFTeDA		**112.5**	12.0	218.0
M3PFBS		**112.2**	50.0	150.0
M3PFHxS		**98.1**	50.0	150.0
M4PFHpA		**99.0**	50.0	150.0
M5PFHxA		**101.6**	50.0	150.0
M5PFPeA		**111.7**	50.0	150.0
M6PFDA		**101.6**	50.0	150.0
M7PFUnDA		**111.7**	50.0	150.0
M8FOSA		**102.2**	50.0	150.0
M8PFOA		**98.5**	50.0	150.0
M8PFOS		**119.0**	50.0	150.0
M9-PFNA		**121.8**	50.0	150.0
MPFBA		**111.7**	50.0	150.0
MPFDoDA		**104.8**	50.0	150.0
d3N-MeFOSAA		**119.4**	50.0	150.0
d5EtFOSAA		**98.6**	50.0	150.0
MHFPO-DA		**97.5**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S33939.05

Sample Tag: Trip Blank

Collected Date/Time: 03/16/2022 00:01

Matrix: Water

COC Reference: 140627

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK220324, Run Date: 03/24/2022 16:58, Matrix: WW, Dilution: 2.1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**105.2**	50.0	150.0
M2-6:2FTSA		**103.0**	50.0	150.0
M2-8:2FTSA		**115.1**	50.0	150.0
M2PFTeDA		**115.9**	12.0	218.0
M3PFBS		**105.6**	50.0	150.0
M3PFHxS		**93.2**	50.0	150.0
M4PFHpA		**92.5**	50.0	150.0
M5PFHxA		**102.8**	50.0	150.0
M5PFPeA		**110.3**	50.0	150.0
M6PFDA		**94.1**	50.0	150.0
M7PFUnDA		**100.7**	50.0	150.0
M8FOSA		**106.5**	50.0	150.0
M8PFOA		**97.9**	50.0	150.0
M8PFOS		**101.8**	50.0	150.0
M9-PFNA		**116.1**	50.0	150.0
MPFBA		**111.3**	50.0	150.0
MPFDoDA		**95.4**	50.0	150.0
d3N-MeFOSAA		**123.9**	50.0	150.0
d5EtFOSAA		**101.4**	50.0	150.0
MHFPO-DA		**103.2**	50.0	150.0

QC Report - Internal Standards per QC Sample

Organics - Volatiles, Prep Batch ID: PF220323W1

QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK)

Lab Sample ID: AK220324.BLK220323

Run in Batch: AK220324, Run Date: 03/24/2022 12:05, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**104.7**	50.0	150.0
M2-6:2FTSA		**85.7**	50.0	150.0
M2-8:2FTSA		**107.8**	50.0	150.0
M2PFTeDA		**115.8**	12.0	218.0
M3PFBS		**102.9**	50.0	150.0
M3PFHxS		**90.5**	50.0	150.0
M4PFHpA		**97.8**	50.0	150.0
M5PFHxA		**99.8**	50.0	150.0
M5PFPeA		**105.4**	50.0	150.0
M6PFDA		**90.3**	50.0	150.0
M7PFUnDA		**99.4**	50.0	150.0
M8FOSA		**98.5**	50.0	150.0
M8PFOA		**100.2**	50.0	150.0
M8PFOS		**93.6**	50.0	150.0
M9-PFNA		**108.2**	50.0	150.0
MPFBA		**104.1**	50.0	150.0
MPFDoDA		**108.5**	50.0	150.0
d3N-MeFOSAA		**113.0**	50.0	150.0
d5EtFOSAA		**95.6**	50.0	150.0
MHFPO-DA		**92.0**	50.0	150.0

QC Report - Internal Standards per QC Sample

Laboratory Control Sample (LCS)

Lab Sample ID: AK220324.LCS220323

Run in Batch: AK220324, Run Date: 03/24/2022 11:06, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**90.6**	50.0	150.0
M2-6:2FTSA		**79.7**	50.0	150.0
M2-8:2FTSA		**102.5**	50.0	150.0
M2PFTeDA		**110.9**	12.0	218.0
M3PFBS		**100.7**	50.0	150.0
M3PFHxS		**93.2**	50.0	150.0
M4PFHpA		**95.2**	50.0	150.0
M5PFHxA		**105.1**	50.0	150.0
M5PFPeA		**104.6**	50.0	150.0
M6PFDA		**87.5**	50.0	150.0
M7PFUnDA		**105.4**	50.0	150.0
M8FOSA		**101.4**	50.0	150.0
M8PFOA		**99.1**	50.0	150.0
M8PFOS		**97.2**	50.0	150.0
M9-PFNA		**113.9**	50.0	150.0
MPFBA		**70.6**	50.0	150.0
MPFDoDA		**106.5**	50.0	150.0
d3N-MeFOSAA		**114.6**	50.0	150.0
d5EtFOSAA		**95.1**	50.0	150.0
MHFPO-DA		**83.6**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220324.LCSD220323R, Parent Sample ID: AK220324.LCS220323

Run in Batch: AK220324, Run Date: 03/24/2022 12:44, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**101.4**	50.0	150.0
M2-6:2FTSA		**89.0**	50.0	150.0
M2-8:2FTSA		**112.7**	50.0	150.0
M2PFTeDA		**128.0**	12.0	218.0
M3PFBS		**96.4**	50.0	150.0
M3PFHxS		**88.6**	50.0	150.0
M4PFHpA		**90.1**	50.0	150.0
M5PFHxA		**100.8**	50.0	150.0
M5PFPeA		**105.8**	50.0	150.0
M6PFDA		**90.5**	50.0	150.0
M7PFUnDA		**103.9**	50.0	150.0
M8FOSA		**98.8**	50.0	150.0
M8PFOA		**86.3**	50.0	150.0
M8PFOS		**105.6**	50.0	150.0
M9-PFNA		**106.4**	50.0	150.0
MPFBA		**102.5**	50.0	150.0
MPFDoDA		**103.5**	50.0	150.0
d3N-MeFOSAA		**116.4**	50.0	150.0
d5EtFOSAA		**92.0**	50.0	150.0
MHFPO-DA		**89.1**	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK220324.3393902RM, Parent Sample ID: S33939.01

Run in Batch: AK220324, Run Date: 03/25/2022 09:31, Prep Date: 03/23/2022, Matrix: WW, Dilution: 2.07

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	**242.7**	50.0	150.0
M2-6:2FTSA	*	**171.1**	50.0	150.0
M2-8:2FTSA		**123.8**	50.0	150.0
M2PFTeDA		**148.4**	12.0	218.0
M3PFBS		**79.4**	50.0	150.0
M3PFHxS		**98.6**	50.0	150.0
M4PFHpA		**104.4**	50.0	150.0
M5PFHxA		**95.1**	50.0	150.0
M5PFPeA		**86.3**	50.0	150.0
M6PFDA		**113.9**	50.0	150.0
M7PFUnDA		**106.1**	50.0	150.0
M8FOSA		**98.0**	50.0	150.0
M8PFOA		**102.7**	50.0	150.0
M8PFOS		**99.0**	50.0	150.0
M9-PFNA		**94.8**	50.0	150.0
MPFBA		**85.1**	50.0	150.0
MPFDoDA		**124.6**	50.0	150.0
d3N-MeFOSAA		**103.8**	50.0	150.0
d5EtFOSAA		**118.4**	50.0	150.0
MHFPO-DA		**83.6**	50.0	150.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: AK220324.3393903N, Parent Sample ID: AK220324.3393902RM

Run in Batch: AK220324, Run Date: 03/24/2022 16:19, Prep Date: 03/23/2022, Matrix: WW, Dilution: 2.04

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	**286.4**	50.0	150.0
M2-6:2FTSA	*	**167.9**	50.0	150.0
M2-8:2FTSA	*	**176.4**	50.0	150.0
M2PFTeDA		**151.1**	12.0	218.0
M3PFBS		**112.0**	50.0	150.0
M3PFHxS		**103.0**	50.0	150.0
M4PFHpA		**100.6**	50.0	150.0
M5PFHxA		**107.9**	50.0	150.0
M5PFPeA		**112.0**	50.0	150.0
M6PFDA		**113.4**	50.0	150.0
M7PFUnDA		**128.9**	50.0	150.0
M8FOSA		**105.1**	50.0	150.0
M8PFOA		**117.4**	50.0	150.0
M8PFOS		**99.3**	50.0	150.0
M9-PFNA		**139.2**	50.0	150.0
MPFBA		**106.8**	50.0	150.0
MPFDoDA		**131.7**	50.0	150.0
d3N-MeFOSAA		**148.0**	50.0	150.0
d5EtFOSAA		**139.7**	50.0	150.0
MHFPO-DA		**96.3**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF220323W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK)

Lab Sample ID: AK220324.BLK220323

Run in Batch: AK220324, Run Date: 03/24/2022 12:05, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	5	ng/l
PFPeA		ND	2	ng/l
4:2 FTSA		ND	1	ng/l
PFHxA		ND	1	ng/l
PFBS		ND	1	ng/l
PFHpA		ND	1	ng/l
PFPeS		ND	1	ng/l
6:2 FTSA		ND	1	ng/l
PFOA		ND	1	ng/l
PFHxS		ND	1	ng/l
PFHxS-LN		ND	1	ng/l
PFHxS-BR		ND	1	ng/l
PFNA		ND	1	ng/l
8:2 FTSA		ND	1	ng/l
PFHpS		ND	1	ng/l
PFDA		ND	1	ng/l
N-MeFOSAA		ND	1	ng/l
EtFOSAA		ND	2	ng/l
PFOS		ND	1	ng/l
PFOS-LN		ND	1	ng/l
PFOS-BR		ND	1	ng/l
PFUnDA		ND	1	ng/l
PFNS		ND	1	ng/l
PFDoDA		ND	1	ng/l
PFDS		ND	1	ng/l
PFTrDA		ND	1	ng/l
FOSA		ND	1	ng/l
PFTeDA		ND	2	ng/l
11CL-PF3OUdS		ND	1	ng/l
9CL-PF3ONS		ND	1	ng/l
ADONA		ND	1	ng/l
HFPO-DA		ND	1	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK220324.LCS220323

Run in Batch: AK220324, Run Date: 03/24/2022 11:06, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		101.0	70.0	130.0
PFPeA		95.4	70.0	130.0
4:2 FTSA		90.8	70.0	130.0
PFHxA		89.8	70.0	130.0
PFBS		96.2	70.0	130.0
HFPO-DA		94.4	70.0	130.0
PFHpA		99.4	70.0	130.0
PFPeS		112.4	70.0	130.0
ADONA		89.8	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF220323W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK220324.LCS220323

Run in Batch: AK220324, Run Date: 03/24/2022 11:06, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		119.2	70.0	130.0
PFOA		100.0	70.0	130.0
PFHxS		94.4	70.0	130.0
PFNA		82.8	70.0	130.0
8:2 FTSA		88.0	70.0	130.0
PFHpS		90.6	70.0	130.0
N-MeFOSAA		90.4	70.0	130.0
PFDA		98.2	70.0	130.0
EtFOSAA		113.0	70.0	130.0
PFOS		80.6	70.0	130.0
PFUnDA		104.8	70.0	130.0
9CL-PF3ONS		104.2	70.0	130.0
PFNS		107.4	70.0	130.0
PFDoDA		99.4	70.0	130.0
PFDS		111.2	70.0	130.0
PFTrDA		108.8	70.0	130.0
FOSA		97.2	70.0	130.0
11CL-PF3OUdS		104.4	70.0	130.0
PFTeDA		112.8	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK220324.LCSD220323R, Parent Sample ID: AK220324.LCS220323

Run in Batch: AK220324, Run Date: 03/24/2022 12:44, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		101.8	70.0	130.0	0.8	30.0
PFPeA		104.0	70.0	130.0	8.6	30.0
4:2 FTSA		102.6	70.0	130.0	12.2	30.0
PFHxA		101.2	70.0	130.0	11.9	30.0
PFBS		105.2	70.0	130.0	8.9	30.0
HFPO-DA		88.2	70.0	130.0	6.8	30.0
PFHpA		100.0	70.0	130.0	0.6	30.0
PFPeS		115.2	70.0	130.0	2.5	30.0
ADONA		95.6	70.0	130.0	6.3	30.0
6:2 FTSA		112.8	70.0	130.0	5.5	30.0
PFOA		128.6	70.0	130.0	25.0	30.0
PFHxS		107.0	70.0	130.0	12.5	30.0
PFNA		99.0	70.0	130.0	17.8	30.0
8:2 FTSA		95.8	70.0	130.0	8.5	30.0
PFHpS		104.4	70.0	130.0	14.2	30.0
N-MeFOSAA		99.0	70.0	130.0	9.1	30.0
PFDA		95.0	70.0	130.0	3.3	30.0
EtFOSAA		104.2	70.0	130.0	8.1	30.0
PFOS		78.6	70.0	130.0	2.5	30.0
PFUnDA		102.6	70.0	130.0	2.1	30.0
9CL-PF3ONS		91.8	70.0	130.0	12.7	30.0
PFNS		99.4	70.0	130.0	7.7	30.0

Organics - Volatiles, Prep Batch ID: PF220323W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK220324.LCSD220323R, Parent Sample ID: AK220324.LCS220323

Run in Batch: AK220324, Run Date: 03/24/2022 12:44, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		107.4	70.0	130.0	7.7	30.0
PFDS		106.0	70.0	130.0	4.8	30.0
PFTrDA		122.0	70.0	130.0	11.4	30.0
FOSA		97.2	70.0	130.0	0.0	30.0
11CL-PF3OUdS		102.6	70.0	130.0	1.7	30.0
PFTeDA		125.6	70.0	130.0	10.7	30.0

Matrix Spike (MS)

Lab Sample ID: AK220324.3393902RM, Parent Sample ID: S33939.01

Run in Batch: AK220324, Run Date: 03/25/2022 09:31, Prep Date: 03/23/2022, Matrix: WW, Dilution: 2.07

Analyte	Flags	% Rec	LCL	UCL
PFBA		125.0	70.0	130.0
PFPeA		115.4	70.0	130.0
4:2 FTSA		105.8	70.0	130.0
PFHxA		105.8	70.0	130.0
PFBS		104.2	70.0	130.0
PFHpA		92.3	70.0	130.0
PFPeS		115.4	70.0	130.0
6:2 FTSA		96.2	70.0	130.0
PFOA		103.3	70.0	130.0
PFHxS		113.4	70.0	130.0
PFNA		105.8	70.0	130.0
8:2 FTSA		83.7	70.0	130.0
PFHpS		105.8	70.0	130.0
PFDA		93.3	70.0	130.0
N-MeFOSAA		105.8	70.0	130.0
EtFOSAA		105.8	70.0	130.0
PFOS		82.7	70.0	130.0
PFUnDA		96.2	70.0	130.0
PFNS		105.8	70.0	130.0
PFDoDA		93.3	70.0	130.0
PFDS		105.8	70.0	130.0
PFTrDA		115.4	70.0	130.0
FOSA		105.8	70.0	130.0
PFTeDA		125.0	70.0	130.0
11CL-PF3OUdS		105.8	70.0	130.0
9CL-PF3ONS		105.8	70.0	130.0
ADONA		89.4	70.0	130.0
HFPO-DA		94.2	70.0	130.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: AK220324.3393903N, Parent Sample ID: AK220324.3393902RM

Run in Batch: AK220324, Run Date: 03/24/2022 16:19, Prep Date: 03/23/2022, Matrix: WW, Dilution: 2.04

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		117.6	70.0	130.0	8.0	30.0
PFPeA		107.8	70.0	130.0	8.7	30.0

Organics - Volatiles, Prep Batch ID: PF220323W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Matrix Spike Duplicate (MSD) (continued)

Lab Sample ID: AK220324.3393903N, Parent Sample ID: AK220324.3393902RM

Run in Batch: AK220324, Run Date: 03/24/2022 16:19, Prep Date: 03/23/2022, Matrix: WW, Dilution: 2.04

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
4:2 FTSA		98.0	70.0	130.0	9.5	30.0
PFHxA		91.2	70.0	130.0	16.7	30.0
PFBS		96.5	70.0	130.0	9.5	30.0
PFHpA		97.1	70.0	130.0	3.1	30.0
PFPeS		98.0	70.0	130.0	18.2	30.0
6:2 FTSA		107.8	70.0	130.0	9.5	30.0
PFOA		88.6	70.0	130.0	16.7	30.0
PFHxS		91.1	70.0	130.0	23.3	30.0
PFNA		81.4	70.0	130.0	28.0	30.0
8:2 FTSA		107.8	70.0	130.0	23.4	30.0
PFHpS		93.1	70.0	130.0	14.6	30.0
PFDA		90.2	70.0	130.0	5.3	30.0
N-MeFOSAA		107.8	70.0	130.0	0.0	30.0
EtFOSAA		93.1	70.0	130.0	14.6	30.0
PFOS		94.1	70.0	130.0	6.1	30.0
PFUnDA		95.1	70.0	130.0	3.0	30.0
PFNS		107.8	70.0	130.0	0.0	30.0
PFDoDA		95.1	70.0	130.0	0.0	30.0
PFDS		107.8	70.0	130.0	0.0	30.0
PFTrDA		107.8	70.0	130.0	8.7	30.0
FOSA		107.8	70.0	130.0	0.0	30.0
PFTeDA		107.8	70.0	130.0	16.7	30.0
11CL-PF3OUdS		107.8	70.0	130.0	0.0	30.0
9CL-PF3ONS		98.0	70.0	130.0	9.5	30.0
ADONA		81.4	70.0	130.0	11.4	30.0
HFPO-DA		84.3	70.0	130.0	13.0	30.0

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # _____ OF _____ 140627

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Rodney Abke
COMPANY: Applied Eco Systems
ADDRESS: Cr 4300 S. Saginaw Street
CITY: Burton STATE: MI ZIP CODE: 48529
PHONE NO.: 810 715 2525 FAX NO.: 810 715 2526 P.O. NO.: P0795930
E-MAIL ADDRESS: rabke@appliedecosystems.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Monica Wallinghford ☐ SAME
COMPANY: Revitalizing Auto Communities Environmental Response (Recen) Trust
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: 313 486 2978 E-MAIL ADDRESS: MWallinghford@recentrust.org

PROJECT NO./NAME: Recen Flint West # 17990
SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other _____

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS/PFOS **	Special Instructions
33934.01	3-16	15:25	~~PAS~~ MW-1075-31622	W	3	X							X	** - 25 compound list
.02	3-16	15:25	MS MW-1075-31622	W	3	X							X	
.03	3-16	15:25	MSD MW-1075-31622	W	3	X							X	
.04	3-16	15:55	EB-1-31622	W	3	X							X	report down to MDLs
.05	3-16		Trip Blank	W	3	X								

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Jacob Henderson AE ☑ Sampler	DATE: 3-16-22	TIME: 16:30	
RECEIVED BY: SIGNATURE/ORGANIZATION: AE	DATE: 3-16-22	TIME: 16:30	
RELINQUISHED BY: SIGNATURE/ORGANIZATION:	DATE: 3-17-22	TIME: 11:35	
RECEIVED BY: SIGNATURE/ORGANIZATION:	DATE: 3/17/22	TIME: 1135	

RELINQUISHED BY: SIGNATURE/ORGANIZATION:	DATE: 3/17/22	TIME: 1720	
RECEIVED BY: SIGNATURE/ORGANIZATION:	DATE: 3/17/22	TIME: 1220	

SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL: 3.2
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

Quality Control Report

Report ID: QC-S33940-01
Generated on 03/24/2022

Report to

Attention: Rodney Abke
Applied Ecosystems
G4300 S. Saginaw Street
Burton, MI 48529

Phone: 810-715-2525 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S33940.01-S33940.04
Project: RACER Flint West #12990
Submitted Date/Time: 03/17/2022 12:20
Sampled by: Unknown
P.O. #: 795930

QC Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S33940.01
Sample Tag: MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/17/22 14:20	CHR220317W1	CHR220317W1	No	BLK/LCS/MS/MSD/DU
Chromium VI	SM3500-Cr B	03/17/22 14:14	CHR220317W1	CHR220317W1	No	BLK/LCS/MS/MSD/DU
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 12:57	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 12:57	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 12:57	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 12:57	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 12:57	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 12:57	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/24/22 01:49	220323B9	VF220323W4	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33940.02
Sample Tag: MS MW-103S-31622
Collected Date/Time: 03/16/2022 15:25
Matrix: Water
COC Reference: 140629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/17/22 14:24	CHR220317W1	CHR220317W1	No	BLK/LCS/MS/MSD/DU
Chromium VI	SM3500-Cr B	03/17/22 14:17	CHR220317W1	CHR220317W1	No	BLK/LCS/MS/MSD/DU
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 12:59	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 12:59	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 12:59	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 12:59	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 12:59	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 12:59	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/23/22 22:56	220323B9	VF220323W4	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33940.03

Sample Tag: MSD MW-103S-31622

Collected Date/Time: 03/16/2022 15:25

Matrix: Water

COC Reference: 140629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/17/22 14:26	CHR220317W1	CHR220317W1	No	BLK/LCS/MS/MSD/DU
Chromium VI	SM3500-Cr B	03/17/22 14:18	CHR220317W1	CHR220317W1	No	BLK/LCS/MS/MSD/DU
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 13:00	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 13:00	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 13:00	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 13:00	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 13:00	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A	MTD-032422-1	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 13:00	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/23/22 23:15	220323B9	VF220323W4	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S33940.04
Sample Tag: EB-1-31622
Collected Date/Time: 03/16/2022 15:53
Matrix: Water
COC Reference: 140629

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Chromium VI, Dissolved	SM3500-Cr B	03/17/22 14:27	CHR220317W1	CHR220317W1	No	BLK/LCS/MS/MSD/DU
Chromium VI	SM3500-Cr B	03/17/22 14:20	CHR220317W1	CHR220317W1	No	BLK/LCS/MS/MSD/DU
Metals						
Arsenic, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Arsenic	E200.8	03/24/22 12:54	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Chromium, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Chromium	E200.8	03/24/22 12:54	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Copper, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Copper	E200.8	03/24/22 12:54	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Lead, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Lead	E200.8	03/24/22 12:54	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Selenium, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Selenium	E200.8	03/24/22 12:54	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Zinc, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Zinc	E200.8	03/24/22 12:54	MT4-22-0324A	MTD-032422-2	No	BLK/LCS/MS/MSD
Organics - Volatiles						
Volatile Organics - DEQ List	SW5030C/8260C	03/24/22 01:30	220323B9	VF220323W4	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: CHR220317W1

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33940.01	Chromium VI, Dissolved	SM3500-Cr B	03/17/22 14:20	CHR220317W1
S33940.01	Chromium VI	SM3500-Cr B	03/17/22 14:14	CHR220317W1
S33940.02	Chromium VI, Dissolved	SM3500-Cr B	03/17/22 14:24	CHR220317W1
S33940.02	Chromium VI	SM3500-Cr B	03/17/22 14:17	CHR220317W1
S33940.03	Chromium VI, Dissolved	SM3500-Cr B	03/17/22 14:26	CHR220317W1
S33940.03	Chromium VI	SM3500-Cr B	03/17/22 14:18	CHR220317W1
S33940.04	Chromium VI, Dissolved	SM3500-Cr B	03/17/22 14:27	CHR220317W1
S33940.04	Chromium VI	SM3500-Cr B	03/17/22 14:20	CHR220317W1

Metals, Prep Batch ID: MTD-032422-1

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33940.01	Arsenic, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A
S33940.01	Chromium, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A
S33940.01	Copper, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A
S33940.01	Lead, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A
S33940.01	Selenium, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A
S33940.01	Zinc, Dissolved	E200.8	03/24/22 12:39	MT4-22-0324A
S33940.02	Arsenic, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A
S33940.02	Chromium, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A
S33940.02	Copper, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A
S33940.02	Lead, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A
S33940.02	Selenium, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A
S33940.02	Zinc, Dissolved	E200.8	03/24/22 12:40	MT4-22-0324A
S33940.03	Arsenic, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A
S33940.03	Chromium, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A
S33940.03	Copper, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A
S33940.03	Lead, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A
S33940.03	Selenium, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A
S33940.03	Zinc, Dissolved	E200.8	03/24/22 12:41	MT4-22-0324A

Metals, Prep Batch ID: MTD-032422-2

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33940.01	Arsenic	E200.8	03/24/22 12:57	MT4-22-0324A
S33940.01	Chromium	E200.8	03/24/22 12:57	MT4-22-0324A
S33940.01	Copper	E200.8	03/24/22 12:57	MT4-22-0324A
S33940.01	Lead	E200.8	03/24/22 12:57	MT4-22-0324A
S33940.01	Selenium	E200.8	03/24/22 12:57	MT4-22-0324A
S33940.01	Zinc	E200.8	03/24/22 12:57	MT4-22-0324A
S33940.02	Arsenic	E200.8	03/24/22 12:59	MT4-22-0324A
S33940.02	Chromium	E200.8	03/24/22 12:59	MT4-22-0324A
S33940.02	Copper	E200.8	03/24/22 12:59	MT4-22-0324A
S33940.02	Lead	E200.8	03/24/22 12:59	MT4-22-0324A
S33940.02	Selenium	E200.8	03/24/22 12:59	MT4-22-0324A
S33940.02	Zinc	E200.8	03/24/22 12:59	MT4-22-0324A
S33940.03	Arsenic	E200.8	03/24/22 13:00	MT4-22-0324A
S33940.03	Chromium	E200.8	03/24/22 13:00	MT4-22-0324A
S33940.03	Copper	E200.8	03/24/22 13:00	MT4-22-0324A
S33940.03	Lead	E200.8	03/24/22 13:00	MT4-22-0324A

Metals, Prep Batch ID: MTD-032422-2 (continued)

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33940.03	Selenium	E200.8	03/24/22 13:00	MT4-22-0324A
S33940.03	Zinc	E200.8	03/24/22 13:00	MT4-22-0324A
S33940.04	Arsenic, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A
S33940.04	Arsenic	E200.8	03/24/22 12:54	MT4-22-0324A
S33940.04	Chromium, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A
S33940.04	Chromium	E200.8	03/24/22 12:54	MT4-22-0324A
S33940.04	Copper, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A
S33940.04	Copper	E200.8	03/24/22 12:54	MT4-22-0324A
S33940.04	Lead, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A
S33940.04	Lead	E200.8	03/24/22 12:54	MT4-22-0324A
S33940.04	Selenium, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A
S33940.04	Selenium	E200.8	03/24/22 12:54	MT4-22-0324A
S33940.04	Zinc, Dissolved	E200.8	03/24/22 12:55	MT4-22-0324A
S33940.04	Zinc	E200.8	03/24/22 12:54	MT4-22-0324A

Organics - Volatiles, Prep Batch ID: VF220323W4

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S33940.01	Volatile Organics - DEQ List	SW5030C/8260C	03/24/22 01:49	220323B9
S33940.02	Volatile Organics - DEQ List	SW5030C/8260C	03/23/22 22:56	220323B9
S33940.03	Volatile Organics - DEQ List	SW5030C/8260C	03/23/22 23:15	220323B9
S33940.04	Volatile Organics - DEQ List	SW5030C/8260C	03/24/22 01:30	220323B9

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33940.01

Sample Tag: MW-103S-31622

Collected Date/Time: 03/16/2022 15:25

Matrix: Water

COC Reference: 140629

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220323B9, Run Date: 03/24/2022 01:49, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**102.1**	80.0	124.0
1,2-Dichloroethane-D4		**94.6**	72.0	125.0
Toluene-D8		**91.9**	89.0	112.0

QC Report - Surrogates per Lab Sample

Lab Sample ID: S33940.04

Sample Tag: EB-1-31622

Collected Date/Time: 03/16/2022 15:53

Matrix: Water

COC Reference: 140629

Organics - Volatiles, Analysis: Volatile Organics - DEQ List

Run in Batch: 220323B9, Run Date: 03/24/2022 01:30, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**102.7**	80.0	124.0
1,2-Dichloroethane-D4		**94.8**	72.0	125.0
Toluene-D8		**92.2**	89.0	112.0

QC Report - Surrogates per QC Sample

Organics - Volatiles, Prep Batch ID: VF220323W4

QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK)

Lab Sample ID: 220323B9.BLKW23B

Run in Batch: 220323B9, Run Date: 03/24/2022 00:52, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		**100.8**	80.0	124.0
1,2-Dichloroethane-D4		**97.1**	72.0	125.0
Toluene-D8		**93.1**	89.0	112.0

Laboratory Control Sample (LCS)

Lab Sample ID: 220323B9.LCSW23B

Run in Batch: 220323B9, Run Date: 03/23/2022 22:17, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		**107.0**	80.0	124.0
1,2-Dichloroethane-D4		**90.5**	72.0	125.0
Toluene-D8		**106.1**	89.0	112.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220323B9.LCSDW23B, Parent Sample ID: 220323B9.LCSW23B

Run in Batch: 220323B9, Run Date: 03/23/2022 22:37, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		**108.8**	80.0	124.0
1,2-Dichloroethane-D4		**97.8**	72.0	125.0
Toluene-D8		**109.2**	89.0	112.0

Matrix Spike (MS)

Lab Sample ID: 220323B9.3392915M, Parent Sample ID: S33929.14

Run in Batch: 220323B9, Run Date: 03/23/2022 23:34, Prep Date: 03/23/2022, Matrix: WW, Dilution: 10

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		**106.8**	80.0	124.0
1,2-Dichloroethane-D4		**94.7**	72.0	125.0
Toluene-D8		**107.2**	89.0	112.0

Matrix Spike (MS)

Lab Sample ID: 220323B9.3394002M, Parent Sample ID: S33940.01

Run in Batch: 220323B9, Run Date: 03/23/2022 22:56, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	%Rec	LCL	UCL
4-Bromofluorobenzene		**106.6**	80.0	124.0
1,2-Dichloroethane-D4		**94.4**	72.0	125.0
Toluene-D8		**107.6**	89.0	112.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: 220323B9.3392916N, Parent Sample ID: 220323B9.3392915M

Run in Batch: 220323B9, Run Date: 03/23/2022 23:54, Prep Date: 03/23/2022, Matrix: WW, Dilution: 10

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**107.5**	80.0	124.0
1,2-Dichloroethane-D4		**97.0**	72.0	125.0
Toluene-D8		**106.9**	89.0	112.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: 220323B9.3394003N, Parent Sample ID: 220323B9.3394002M

Run in Batch: 220323B9, Run Date: 03/23/2022 23:15, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Surrogate	Flags	**%Rec**	LCL	UCL
4-Bromofluorobenzene		**105.1**	80.0	124.0
1,2-Dichloroethane-D4		**92.7**	72.0	125.0
Toluene-D8		**106.2**	89.0	112.0

Inorganics, Prep Batch ID: CHR220317W1

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

Blank (BLK)

Lab Sample ID: CHR220317W1.LRB1

Run in Batch: CHR220317W1, Run Date: 03/17/2022 13:43, Prep Date: 03/17/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Chromium VI		ND	0.01	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: CHR220317W1.LCS1

Run in Batch: CHR220317W1, Run Date: 03/17/2022 13:44, Prep Date: 03/17/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Chromium VI		102.8	90	110

Matrix Spike (MS)

Lab Sample ID: CHR220317W1.MS1, Parent Sample ID: S33940.01

Run in Batch: CHR220317W1, Run Date: 03/17/2022 14:17, Prep Date: 03/17/2022, Matrix: Liquid, Dilution: 2

Analyte	Flags	% Rec	LCL	UCL
Chromium VI	*	0.0	80	120

Matrix Spike (MS)

Lab Sample ID: CHR220317W1.MS2, Parent Sample ID: S33940.01

Run in Batch: CHR220317W1, Run Date: 03/17/2022 14:24, Prep Date: 03/17/2022, Matrix: Liquid, Dilution: 2

Analyte	Flags	% Rec	LCL	UCL
Chromium VI	*	0.0	80	120

Matrix Spike Duplicate (MSD)

Lab Sample ID: CHR220317W1.MSD1, Parent Sample ID: CHR220317W1.MS1

Run in Batch: CHR220317W1, Run Date: 03/17/2022 14:18, Prep Date: 03/17/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Chromium VI	*	0.0	80	120	NC	15

Matrix Spike Duplicate (MSD)

Lab Sample ID: CHR220317W1.MSD2, Parent Sample ID: CHR220317W1.MS2

Run in Batch: CHR220317W1, Run Date: 03/17/2022 14:26, Prep Date: 03/17/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Chromium VI	*	0.0	80	120	NC	15

Duplicate (DUP)

Lab Sample ID: CHR220317W1.DP1, Parent Sample ID: S33940.01

Run in Batch: CHR220317W1, Run Date: 03/17/2022 14:15, Prep Date: 03/17/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Chromium VI		NC	15

Duplicate (DUP)

Lab Sample ID: CHR220317W1.DP2, Parent Sample ID: S33940.01

Run in Batch: CHR220317W1, Run Date: 03/17/2022 14:23, Prep Date: 03/17/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Chromium VI		NC	15

Metals, Prep Batch ID: MTD-032422-1

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Blank (BLK)

Lab Sample ID: MT4-22-0324A.018.LRB

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 11:24, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Arsenic		ND	0.0004	mg/L
Chromium		ND	0.001	mg/L
Copper		ND	0.001	mg/L
Lead		ND	0.0006	mg/L
Selenium		ND	0.001	mg/L
Zinc		ND	0.001	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: MT4-22-0324A.017.LCS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 11:22, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		103	85	115
Chromium		100	85	115
Copper		100	85	115
Lead		98	85	115
Selenium		102	85	115
Zinc		99	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-22-0324A.037.MS, Parent Sample ID: S33914.05

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:05, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		106	75	125
Chromium		102	75	125
Copper		96	75	125
Lead		96	75	125
Selenium		107	75	125
Zinc		102	75	125

Matrix Spike (MS)

Lab Sample ID: MT4-22-0324A.058.MS, Parent Sample ID: S33940.01

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:40, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Chromium		98	75	125
Copper		94	75	125
Zinc		100	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-22-0324A.038.MSD, Parent Sample ID: MT4-22-0324A.037.MS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:06, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		106	75	125	0	20
Chromium		102	75	125	0	20
Copper		97	75	125	1	20
Lead		98	75	125	2	20
Selenium		109	75	125	1	20

Metals, Prep Batch ID: MTD-032422-1 (continued)

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Matrix Spike Duplicate (MSD) (continued)

Lab Sample ID: MT4-22-0324A.038.MSD, Parent Sample ID: MT4-22-0324A.037.MS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:06, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Zinc		104	75	125	2	20

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-22-0324A.059.MSD, Parent Sample ID: MT4-22-0324A.058.MS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:41, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Chromium		104	75	125	6	20
Copper		98	75	125	5	20
Zinc		100	75	125	1	20

Metals, Prep Batch ID: MTD-032422-2

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Blank (BLK)

Lab Sample ID: MT4-22-0324A.063.LRB

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:52, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Arsenic		ND	0.0004	mg/L
Chromium		ND	0.001	mg/L
Copper		ND	0.001	mg/L
Lead		ND	0.0006	mg/L
Selenium		ND	0.001	mg/L
Zinc		ND	0.001	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: MT4-22-0324A.062.LCS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:49, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		100	85	115
Chromium		100	85	115
Copper		99	85	115
Lead		100	85	115
Selenium		100	85	115
Zinc		101	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-22-0324A.068.MS, Parent Sample ID: S33940.01

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 12:59, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		104	75	125
Chromium		103	75	125
Copper		98	75	125
Lead		101	75	125
Selenium		109	75	125
Zinc		105	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-22-0324A.069.MSD, Parent Sample ID: MT4-22-0324A.068.MS

Run in Batch: MT4-22-0324A, Run Date: 03/24/2022 13:00, Prep Date: 03/24/2022, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		104	75	125	0	20
Chromium		100	75	125	3	20
Copper		98	75	125	0	20
Lead		97	75	125	4	20
Selenium		112	75	125	3	20
Zinc		105	75	125	0	20

Organics - Volatiles, Prep Batch ID: VF220323W4

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK)

Lab Sample ID: 220323B9.BLKW23B

Run in Batch: 220323B9, Run Date: 03/24/2022 00:52, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Diethyl ether		ND	1.00	ug/l
Acetone		ND	10.00	ug/l
Methyl iodide		ND	1.00	ug/l
Carbon disulfide		ND	1.00	ug/l
tert-Methyl butyl ether (MTBE)		ND	1.00	ug/l
Acrylonitrile		ND	1.00	ug/l
2-Butanone (MEK)		ND	10.00	ug/l
Dichlorodifluoromethane		ND	1.00	ug/l
Chloromethane		ND	1.00	ug/l
Vinyl chloride		ND	1.00	ug/l
Bromomethane		ND	1.00	ug/l
Chloroethane		ND	1.00	ug/l
Trichlorofluoromethane		ND	1.00	ug/l
1,1-Dichloroethene		ND	1.00	ug/l
Methylene chloride		ND	1.00	ug/l
trans-1,2-Dichloroethene		ND	1.00	ug/l
1,1-Dichloroethane		ND	1.00	ug/l
cis-1,2-Dichloroethene		ND	1.00	ug/l
Tetrahydrofuran		ND	10.00	ug/l
Chloroform		ND	1.00	ug/l
Bromochloromethane		ND	1.00	ug/l
1,1,1-Trichloroethane		ND	1.00	ug/l
4-Methyl-2-pentanone (MIBK)		ND	10.00	ug/l
2-Hexanone		ND	10.00	ug/l
Carbon tetrachloride		ND	1.00	ug/l
Benzene		ND	1.00	ug/l
1,2-Dichloroethane		ND	1.00	ug/l
Trichloroethene		ND	1.00	ug/l
1,2-Dichloropropane		ND	1.00	ug/l
Bromodichloromethane		ND	1.00	ug/l
Dibromomethane		ND	1.00	ug/l
cis-1,3-Dichloropropene		ND	1.00	ug/l
Toluene		ND	1.00	ug/l
trans-1,3-Dichloropropene		ND	1.00	ug/l
1,1,2-Trichloroethane		ND	1.00	ug/l
Tetrachloroethene		ND	1.00	ug/l
trans-1,4-Dichloro-2-butene		ND	1.00	ug/l
Dibromochloromethane		ND	1.00	ug/l
1,2-Dibromoethane		ND	1.00	ug/l
Chlorobenzene		ND	1.00	ug/l
1,1,1,2-Tetrachloroethane		ND	1.00	ug/l
Ethylbenzene		ND	1.00	ug/l
p,m-Xylene		ND	1.00	ug/l
o-Xylene		ND	1.00	ug/l
Styrene		ND	1.00	ug/l
Isopropylbenzene		ND	1.00	ug/l

Organics - Volatiles, Prep Batch ID: VF220323W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK) (continued)

Lab Sample ID: 220323B9.BLKW23B

Run in Batch: 220323B9, Run Date: 03/24/2022 00:52, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Bromoform		ND	1.00	ug/l
1,1,2,2-Tetrachloroethane		ND	1.00	ug/l
1,2,3-Trichloropropane		ND	1.00	ug/l
n-Propylbenzene		ND	1.00	ug/l
Bromobenzene		ND	1.00	ug/l
1,3,5-Trimethylbenzene		ND	1.00	ug/l
tert-Butylbenzene		ND	1.00	ug/l
1,2,4-Trimethylbenzene		ND	1.00	ug/l
sec-Butylbenzene		ND	1.00	ug/l
p-Isopropyltoluene		ND	1.00	ug/l
1,3-Dichlorobenzene		ND	1.00	ug/l
1,4-Dichlorobenzene		ND	1.00	ug/l
1,2-Dichlorobenzene		ND	1.00	ug/l
1,2,3-Trimethylbenzene		ND	1.00	ug/l
n-Butylbenzene		ND	1.00	ug/l
Hexachloroethane		ND	1.00	ug/l
1,2-Dibromo-3-chloropropane		ND	1.00	ug/l
1,2,4-Trichlorobenzene		ND	1.00	ug/l
1,2,3-Trichlorobenzene		ND	1.00	ug/l
Naphthalene		ND	1.00	ug/l
2-Methylnaphthalene		ND	1.00	ug/l

Laboratory Control Sample (LCS)

Lab Sample ID: 220323B9.LCSW23B

Run in Batch: 220323B9, Run Date: 03/23/2022 22:17, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Diethyl ether		85.7	67.4	121.2
Acetone		89.9	29.9	161.5
Methyl iodide		94.4	68.8	116.4
Carbon disulfide		86.8	63.8	137.4
tert-Methyl butyl ether (MTBE)		89.3	73.2	122.4
Acrylonitrile		98.0	69.9	128.9
2-Butanone (MEK)		94.0	44.0	134.4
Dichlorodifluoromethane		99.2	10.0	222.8
Chloromethane		71.6	23.8	166.5
Vinyl chloride		66.9	43.5	149.1
Bromomethane		58.7	56.8	151.3
Chloroethane		59.5	53.4	149.4
Trichlorofluoromethane		72.7	59.7	151.8
1,1-Dichloroethene		86.1	69.6	139.4
Methylene chloride		88.0	73.3	121.1
trans-1,2-Dichloroethene		90.4	73.6	129.3
1,1-Dichloroethane		90.9	71.5	126.2
cis-1,2-Dichloroethene		92.6	76.6	122.1
Tetrahydrofuran		92.0	59.0	117.9
Chloroform		94.0	78.4	124.0

Organics - Volatiles, Prep Batch ID: VF220323W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220323B9.LCSW23B

Run in Batch: 220323B9, Run Date: 03/23/2022 22:17, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Bromochloromethane		96.3	78.2	120.8
1,1,1-Trichloroethane		91.9	79.4	130.9
4-Methyl-2-pentanone (MIBK)		100.3	71.6	125.2
2-Hexanone		100.5	55.4	136.9
Carbon tetrachloride		90.5	72.6	133.0
Benzene		86.3	79.9	124.9
1,2-Dichloroethane		85.9	76.0	126.3
Trichloroethene		96.2	79.7	124.2
1,2-Dichloropropane		87.8	78.6	126.4
Bromodichloromethane		95.4	80.4	128.2
Dibromomethane		106.9	76.9	122.1
cis-1,3-Dichloropropene		98.4	79.8	129.9
Toluene		98.2	79.8	124.5
trans-1,3-Dichloropropene		110.3	74.0	131.3
1,1,2-Trichloroethane		99.4	78.7	123.1
Tetrachloroethene		113.0	74.5	124.5
trans-1,4-Dichloro-2-butene	*	62.9	68.6	135.4
Dibromochloromethane		97.6	74.6	127.2
1,2-Dibromoethane		102.9	70.3	133.7
Chlorobenzene		98.0	79.2	122.7
1,1,1,2-Tetrachloroethane		98.6	80.3	128.2
Ethylbenzene		97.8	79.5	129.1
p,m-Xylene		95.8	79.4	132.2
o-Xylene		96.8	80.2	131.0
Styrene		74.7	69.5	126.7
Isopropylbenzene		101.2	74.4	121.5
Bromoform		100.9	69.4	128.0
1,1,2,2-Tetrachloroethane		98.9	79.8	126.3
1,2,3-Trichloropropane		98.6	78.3	138.8
n-Propylbenzene		102.6	82.0	130.7
Bromobenzene		100.3	78.7	124.6
1,3,5-Trimethylbenzene		98.2	81.3	128.9
tert-Butylbenzene		102.5	80.7	128.9
1,2,4-Trimethylbenzene	*	79.7	81.4	130.8
sec-Butylbenzene		103.8	77.4	129.8
p-Isopropyltoluene		103.9	79.8	137.5
1,3-Dichlorobenzene		103.2	77.0	131.3
1,4-Dichlorobenzene		100.2	20.7	137.7
1,2-Dichlorobenzene		103.5	10.0	166.2
1,2,3-Trimethylbenzene		105.5	76.3	124.2
n-Butylbenzene		102.0	80.0	133.3
Hexachloroethane		105.0	23.8	138.1
1,2-Dibromo-3-chloropropane		149.3	21.2	189.4
1,2,4-Trichlorobenzene		141.6	27.4	143.4
1,2,3-Trichlorobenzene	*	141.4	75.4	131.4
Naphthalene		107.2	32.9	135.8

Organics - Volatiles, Prep Batch ID: VF220323W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: 220323B9.LCSW23B

Run in Batch: 220323B9, Run Date: 03/23/2022 22:17, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
2-Methylnaphthalene		118.4	25.5	165.5

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: 220323B9.LCSDW23B, Parent Sample ID: 220323B9.LCSW23B

Run in Batch: 220323B9, Run Date: 03/23/2022 22:37, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Diethyl ether		87.5	67.4	121.2	2.1	30.0
Acetone		87.2	29.9	161.5	3.0	30.0
Methyl iodide		92.5	68.8	116.4	2.0	30.0
Carbon disulfide		81.5	63.8	137.4	6.3	30.0
tert-Methyl butyl ether (MTBE)		93.7	73.2	122.4	4.8	30.0
Acrylonitrile		97.6	69.9	128.9	0.3	30.0
2-Butanone (MEK)		93.7	44.0	134.4	0.4	30.0
Dichlorodifluoromethane		93.7	10.0	222.8	5.7	30.0
Chloromethane		68.1	23.8	166.5	5.1	30.0
Vinyl chloride		61.7	43.5	149.1	8.1	30.0
Bromomethane		58.3	56.8	151.3	0.7	30.0
Chloroethane		56.5	53.4	149.4	5.1	30.0
Trichlorofluoromethane		67.9	59.7	151.8	6.8	30.0
1,1-Dichloroethene		81.2	69.6	139.4	5.8	30.0
Methylene chloride		88.5	73.3	121.1	0.6	30.0
trans-1,2-Dichloroethene		87.8	73.6	129.3	2.9	30.0
1,1-Dichloroethane		91.7	71.5	126.2	0.9	30.0
cis-1,2-Dichloroethene		96.1	76.6	122.1	3.6	30.0
Tetrahydrofuran		96.7	59.0	117.9	5.0	30.0
Chloroform		96.3	78.4	124.0	2.4	30.0
Bromochloromethane		101.9	78.2	120.8	5.6	30.0
1,1,1-Trichloroethane		86.9	79.4	130.9	5.6	30.0
4-Methyl-2-pentanone (MIBK)		103.7	71.6	125.2	3.3	30.0
2-Hexanone		100.9	55.4	136.9	0.4	30.0
Carbon tetrachloride		84.5	72.6	133.0	6.9	30.0
Benzene		88.3	79.9	124.9	2.3	30.0
1,2-Dichloroethane		89.6	76.0	126.3	4.2	30.0
Trichloroethene		92.1	79.7	124.2	4.4	30.0
1,2-Dichloropropane		90.3	78.6	126.4	2.8	30.0
Bromodichloromethane		98.7	80.4	128.2	3.4	30.0
Dibromomethane		110.0	76.9	122.1	2.8	30.0
cis-1,3-Dichloropropene		104.8	79.8	129.9	6.3	30.0
Toluene		97.2	79.8	124.5	0.9	30.0
trans-1,3-Dichloropropene		116.3	74.0	131.3	5.3	30.0
1,1,2-Trichloroethane		102.5	78.7	123.1	3.0	30.0
Tetrachloroethene		109.2	74.5	124.5	3.4	30.0
trans-1,4-Dichloro-2-butene	*	64.1	68.6	135.4	1.8	30.0
Dibromochloromethane		100.6	74.6	127.2	3.0	30.0
1,2-Dibromoethane		106.0	70.3	133.7	2.9	30.0
Chlorobenzene		95.9	79.2	122.7	2.2	30.0

Organics - Volatiles, Prep Batch ID: VF220323W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: 220323B9.LCSDW23B, Parent Sample ID: 220323B9.LCSW23B

Run in Batch: 220323B9, Run Date: 03/23/2022 22:37, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
1,1,1,2-Tetrachloroethane		96.9	80.3	128.2	1.7	30.0
Ethylbenzene		92.6	79.5	129.1	5.5	30.0
p,m-Xylene		90.9	79.4	132.2	5.2	30.0
o-Xylene		91.6	80.2	131.0	5.5	30.0
Styrene		72.5	69.5	126.7	3.0	30.0
Isopropylbenzene		93.0	74.4	121.5	8.4	30.0
Bromoform		100.1	69.4	128.0	0.8	30.0
1,1,2,2-Tetrachloroethane		99.1	79.8	126.3	0.1	30.0
1,2,3-Trichloropropane		97.4	78.3	138.8	1.2	30.0
n-Propylbenzene		94.9	82.0	130.7	7.8	30.0
Bromobenzene		100.3	78.7	124.6	0.1	30.0
1,3,5-Trimethylbenzene		92.2	81.3	128.9	6.3	30.0
tert-Butylbenzene		93.1	80.7	128.9	9.7	30.0
1,2,4-Trimethylbenzene	*	74.3	81.4	130.8	7.1	30.0
sec-Butylbenzene		93.8	77.4	129.8	10.2	30.0
p-Isopropyltoluene		96.6	79.8	137.5	7.2	30.0
1,3-Dichlorobenzene		100.4	77.0	131.3	2.7	30.0
1,4-Dichlorobenzene		97.6	20.7	137.7	2.6	30.0
1,2-Dichlorobenzene		101.2	10.0	166.2	2.2	30.0
1,2,3-Trimethylbenzene		101.2	76.3	124.2	4.2	30.0
n-Butylbenzene		92.9	80.0	133.3	9.4	30.0
Hexachloroethane		97.1	23.8	138.1	7.8	30.0
1,2-Dibromo-3-chloropropane		145.3	21.2	189.4	2.7	30.0
1,2,4-Trichlorobenzene		138.9	27.4	143.4	1.9	30.0
1,2,3-Trichlorobenzene	*	138.9	75.4	131.4	1.8	30.0
Naphthalene		104.7	32.9	135.8	2.4	30.0
2-Methylnaphthalene		118.4	25.5	165.5	0.0	30.0

Matrix Spike (MS)

Lab Sample ID: 220323B9.3392915M, Parent Sample ID: S33929.14

Run in Batch: 220323B9, Run Date: 03/23/2022 23:34, Prep Date: 03/23/2022, Matrix: WW, Dilution: 10

Analyte	Flags	% Rec	LCL	UCL
Vinyl chloride		63.4	43.5	149.1
Chloroethane		57.6	53.4	149.4
1,1-Dichloroethene		79.5	69.6	139.4
trans-1,2-Dichloroethene		86.2	73.6	129.3
1,1-Dichloroethane		91.5	71.5	126.2
cis-1,2-Dichloroethene		95.4	76.6	122.1
1,1,1-Trichloroethane		89.1	79.4	130.9
1,2-Dichloroethane		88.2	76.0	126.3
Trichloroethene		87.7	79.7	124.2
1,1,2-Trichloroethane		101.7	78.7	123.1
Tetrachloroethene		113.5	74.5	124.5
1,1,2,2-Tetrachloroethane		97.4	79.8	126.3

Organics - Volatiles, Prep Batch ID: VF220323W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Matrix Spike (MS)

Lab Sample ID: 220323B9.3394002M, Parent Sample ID: S33940.01

Run in Batch: 220323B9, Run Date: 03/23/2022 22:56, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Diethyl ether		82.9	67.4	121.2
Acetone		79.7	29.9	161.5
Methyl iodide		94.3	68.8	116.4
Carbon disulfide		85.7	63.8	137.4
tert-Methyl butyl ether (MTBE)		91.3	73.2	122.4
Acrylonitrile		91.8	69.9	128.9
2-Butanone (MEK)		95.1	44.0	134.4
Dichlorodifluoromethane		101.2	10.0	222.8
Chloromethane		70.4	23.8	166.5
Vinyl chloride		65.9	43.5	149.1
Bromomethane		61.9	56.8	151.3
Chloroethane		58.1	53.4	149.4
Trichlorofluoromethane		73.6	59.7	151.8
1,1-Dichloroethene		85.0	69.6	139.4
Methylene chloride		88.2	73.3	121.1
trans-1,2-Dichloroethene		92.1	73.6	129.3
1,1-Dichloroethane		95.0	71.5	126.2
cis-1,2-Dichloroethene		99.3	76.6	122.1
Tetrahydrofuran		89.7	59.0	117.9
Chloroform		98.2	78.4	124.0
Bromochloromethane		102.3	78.2	120.8
1,1,1-Trichloroethane		92.9	79.4	130.9
4-Methyl-2-pentanone (MIBK)		104.8	71.6	125.2
2-Hexanone		94.2	55.4	136.9
Carbon tetrachloride		89.5	72.6	133.0
Benzene		91.2	79.9	124.9
1,2-Dichloroethane		89.0	76.0	126.3
Trichloroethene		99.5	79.7	124.2
1,2-Dichloropropane		89.1	78.6	126.4
Bromodichloromethane		100.9	80.4	128.2
Dibromomethane		106.6	76.9	122.1
cis-1,3-Dichloropropene		103.8	79.8	129.9
Toluene		99.7	79.8	124.5
trans-1,3-Dichloropropene		115.0	74.0	131.3
1,1,2-Trichloroethane		101.0	78.7	123.1
Tetrachloroethene		115.1	74.5	124.5
trans-1,4-Dichloro-2-butene		69.1	68.6	135.4
Dibromochloromethane		102.7	74.6	127.2
1,2-Dibromoethane		103.9	70.3	133.7
Chlorobenzene		98.9	79.2	122.7
1,1,1,2-Tetrachloroethane		100.2	80.3	128.2
Ethylbenzene		97.3	79.5	129.1
p,m-Xylene		96.1	79.4	132.2
o-Xylene		95.3	80.2	131.0
Styrene		71.5	69.5	126.7
Isopropylbenzene		98.6	74.4	121.5

Organics - Volatiles, Prep Batch ID: VF220323W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Matrix Spike (MS) (continued)

Lab Sample ID: 220323B9.3394002M, Parent Sample ID: S33940.01

Run in Batch: 220323B9, Run Date: 03/23/2022 22:56, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Bromoform		102.8	69.4	128.0
1,1,2,2-Tetrachloroethane		98.0	79.8	126.3
1,2,3-Trichloropropane		97.5	78.3	138.8
n-Propylbenzene		101.7	82.0	130.7
Bromobenzene		102.6	78.7	124.6
1,3,5-Trimethylbenzene		96.0	81.3	128.9
tert-Butylbenzene		99.7	80.7	128.9
1,2,4-Trimethylbenzene	*	77.2	81.4	130.8
sec-Butylbenzene		103.1	77.4	129.8
p-Isopropyltoluene		103.5	79.8	137.5
1,3-Dichlorobenzene		104.0	77.0	131.3
1,4-Dichlorobenzene		101.5	20.7	137.7
1,2-Dichlorobenzene		104.0	10.0	166.2
1,2,3-Trimethylbenzene		103.3	76.3	124.2
n-Butylbenzene		104.8	80.0	133.3
Hexachloroethane		106.8	23.8	138.1
1,2-Dibromo-3-chloropropane		152.0	21.2	189.4
1,2,4-Trichlorobenzene	*	148.0	27.4	143.4
1,2,3-Trichlorobenzene	*	149.0	75.4	131.4
Naphthalene		114.2	32.9	135.8
2-Methylnaphthalene		146.3	25.5	165.5

Matrix Spike Duplicate (MSD)

Lab Sample ID: 220323B9.3392916N, Parent Sample ID: 220323B9.3392915M

Run in Batch: 220323B9, Run Date: 03/23/2022 23:54, Prep Date: 03/23/2022, Matrix: WW, Dilution: 10

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Vinyl chloride		59.5	43.5	149.1	6.4	30.0
Chloroethane	*	52.6	53.4	149.4	9.2	30.0
1,1-Dichloroethene		78.2	69.6	139.4	1.6	30.0
trans-1,2-Dichloroethene		87.4	73.6	129.3	1.5	30.0
1,1-Dichloroethane		90.2	71.5	126.2	1.5	30.0
cis-1,2-Dichloroethene		96.9	76.6	122.1	1.5	30.0
1,1,1-Trichloroethane		87.6	79.4	130.9	1.6	30.0
1,2-Dichloroethane		85.1	76.0	126.3	3.5	30.0
Trichloroethene		84.2	79.7	124.2	1.9	30.0
1,1,2-Trichloroethane		98.5	78.7	123.1	3.2	30.0
Tetrachloroethene		107.9	74.5	124.5	5.0	30.0
1,1,2,2-Tetrachloroethane		95.1	79.8	126.3	2.4	30.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: 220323B9.3394003N, Parent Sample ID: 220323B9.3394002M

Run in Batch: 220323B9, Run Date: 03/23/2022 23:15, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Diethyl ether		80.8	67.4	121.2	2.6	30.0
Acetone		83.1	29.9	161.5	3.7	30.0
Methyl iodide		87.8	68.8	116.4	7.1	30.0

Organics - Volatiles, Prep Batch ID: VF220323W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Matrix Spike Duplicate (MSD) (continued)

Lab Sample ID: 220323B9.3394003N, Parent Sample ID: 220323B9.3394002M

Run in Batch: 220323B9, Run Date: 03/23/2022 23:15, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Carbon disulfide		82.5	63.8	137.4	3.9	30.0
tert-Methyl butyl ether (MTBE)		89.8	73.2	122.4	1.6	30.0
Acrylonitrile		97.7	69.9	128.9	6.3	30.0
2-Butanone (MEK)		99.5	44.0	134.4	4.4	30.0
Dichlorodifluoromethane		103.1	10.0	222.8	1.9	30.0
Chloromethane		67.0	23.8	166.5	4.9	30.0
Vinyl chloride		62.8	43.5	149.1	4.8	30.0
Bromomethane	*	54.8	56.8	151.3	12.2	30.0
Chloroethane		54.2	53.4	149.4	7.0	30.0
Trichlorofluoromethane		71.2	59.7	151.8	3.4	30.0
1,1-Dichloroethene		81.2	69.6	139.4	4.5	30.0
Methylene chloride		83.5	73.3	121.1	5.5	30.0
trans-1,2-Dichloroethene		86.9	73.6	129.3	5.8	30.0
1,1-Dichloroethane		90.3	71.5	126.2	5.1	30.0
cis-1,2-Dichloroethene		93.6	76.6	122.1	6.0	30.0
Tetrahydrofuran		98.4	59.0	117.9	9.2	30.0
Chloroform		94.3	78.4	124.0	4.1	30.0
Bromochloromethane		97.6	78.2	120.8	4.7	30.0
1,1,1-Trichloroethane		88.1	79.4	130.9	5.4	30.0
4-Methyl-2-pentanone (MIBK)		107.7	71.6	125.2	2.7	30.0
2-Hexanone		100.3	55.4	136.9	5.8	30.0
Carbon tetrachloride		86.2	72.6	133.0	3.7	30.0
Benzene		85.0	79.9	124.9	7.0	30.0
1,2-Dichloroethane		84.6	76.0	126.3	5.1	30.0
Trichloroethene		94.0	79.7	124.2	5.6	30.0
1,2-Dichloropropane		86.1	78.6	126.4	3.4	30.0
Bromodichloromethane		95.4	80.4	128.2	5.5	30.0
Dibromomethane		103.8	76.9	122.1	2.6	30.0
cis-1,3-Dichloropropene		101.3	79.8	129.9	2.5	30.0
Toluene		96.3	79.8	124.5	3.5	30.0
trans-1,3-Dichloropropene		108.4	74.0	131.3	6.0	30.0
1,1,2-Trichloroethane		97.8	78.7	123.1	3.2	30.0
Tetrachloroethene		111.1	74.5	124.5	3.6	30.0
trans-1,4-Dichloro-2-butene		72.6	68.6	135.4	4.9	30.0
Dibromochloromethane		101.5	74.6	127.2	1.1	30.0
1,2-Dibromoethane		106.7	70.3	133.7	2.7	30.0
Chlorobenzene		97.7	79.2	122.7	1.2	30.0
1,1,1,2-Tetrachloroethane		95.3	80.3	128.2	5.0	30.0
Ethylbenzene		94.6	79.5	129.1	2.8	30.0
p,m-Xylene		91.2	79.4	132.2	5.2	30.0
o-Xylene		91.8	80.2	131.0	3.7	30.0
Styrene	*	68.4	69.5	126.7	4.5	30.0
Isopropylbenzene		97.6	74.4	121.5	1.1	30.0
Bromoform		103.6	69.4	128.0	0.8	30.0
1,1,2,2-Tetrachloroethane		101.5	79.8	126.3	3.5	30.0
1,2,3-Trichloropropane		100.7	78.3	138.8	3.3	30.0

Organics - Volatiles, Prep Batch ID: VF220323W4 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Matrix Spike Duplicate (MSD) (continued)

Lab Sample ID: 220323B9.3394003N, Parent Sample ID: 220323B9.3394002M

Run in Batch: 220323B9, Run Date: 03/23/2022 23:15, Prep Date: 03/23/2022, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
n-Propylbenzene		98.7	82.0	130.7	2.9	30.0
Bromobenzene		98.2	78.7	124.6	4.4	30.0
1,3,5-Trimethylbenzene		94.1	81.3	128.9	2.1	30.0
tert-Butylbenzene		97.9	80.7	128.9	1.9	30.0
1,2,4-Trimethylbenzene	*	75.0	81.4	130.8	3.0	30.0
sec-Butylbenzene		104.1	77.4	129.8	1.0	30.0
p-Isopropyltoluene		102.5	79.8	137.5	1.0	30.0
1,3-Dichlorobenzene		102.9	77.0	131.3	1.1	30.0
1,4-Dichlorobenzene		99.6	20.7	137.7	1.9	30.0
1,2-Dichlorobenzene		102.9	10.0	166.2	1.0	30.0
1,2,3-Trimethylbenzene		100.6	76.3	124.2	2.6	30.0
n-Butylbenzene		102.9	80.0	133.3	1.9	30.0
Hexachloroethane		105.4	23.8	138.1	1.3	30.0
1,2-Dibromo-3-chloropropane		167.8	21.2	189.4	9.9	30.0
1,2,4-Trichlorobenzene	*	148.3	27.4	143.4	0.2	30.0
1,2,3-Trichlorobenzene	*	148.7	75.4	131.4	0.2	30.0
Naphthalene		120.5	32.9	135.8	5.4	30.0
2-Methylnaphthalene		153.4	25.5	165.5	4.8	30.0

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # _____ OF _____ 140629

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Rodney Abke
COMPANY: Applied Eco Systems
ADDRESS: 6r 4300 S. Saginaw Street
CITY: Burton STATE: MI ZIP CODE: 48529
PHONE NO.: 810 715 2525 FAX NO.: 810 715 2526 P.O. NO.: PO795930
E-MAIL ADDRESS: rabke@appliedecosystems.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Monica Wallingford ☐ SAME
COMPANY: Crystalizing Auto Communities Environmental Response (RACER) Trust
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: 313 486 2978 E-MAIL ADDRESS: mwallingford@racertrust.org

PROJECT NO./NAME: Racer Flint West #12990
SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER _____

DELIVERABLES REQUIRED ☐ STD ☒ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES
Project Locations
☐ Detroit ☐ New York
☐ Other _____
Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	VOCs	Metals, dissolved *	Metals, total *	Special Instructions
33990.01	3-16	15:25	MW-1035-31622	W	6	X	X	X					X	X	X	*metals list includes
.02	3-16	15:25	MS MW-1035-31622	W	6	X	X	X					X	X	X	Ar, Cr-total,
.03	3-16	15:25	MSD MW-1035-31622	W	6	X	X	X					X	X	X	Cr-Hex, Cu
.04	3-16	15:57	EB-1-31622	W	6	X	X	X					X	X	X	Pb, Se, Zn
																report down to MCLs

RELINQUISHED BY: SIGNATURE/ORGANIZATION: Joshua Hendrickson AE ☑ Sampler DATE: 3-16-22 TIME: 16:30
RECEIVED BY: SIGNATURE/ORGANIZATION: AE DATE: 3-16-22 TIME: 16:30
RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: 3-17-22 TIME: 11:35
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 3/17/22 TIME: 1132

RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: 3/17/22 TIME: 1220
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: 3/17/22 TIME: 1220

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.2

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

TABLE 2
SOIL ANALYTICAL DATA (Metals and Detected VOCs)
RACER - Flint West #12990

				Sample ID:	SB-122	SB-123	SB124-4	SB124-10	SB124-21	SB125-4	SB125-13	SB125-19	SB126-4	SB126-11	SB126-15	SB127-4	SB127-8	SB127-15	SB127-20	SB128-3	SB128-7	SB128-10
				Date Collected:	4/30/2013	4/30/2013	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14	4/21/14
				Depth:	15-16	5-6	4	10	21	4	13	19	4	11	15	4	8	15	20	3	7	10
ANALYTE (ug/kg)	**DW**	GSI																				
Arsenic	5,800	5,800	D&G=B			1,130	1,100	1,830	570	1,440	1,410	1,300	1,250	1,180	410	1,630	2,060	1,780	500	1,550	1,150
Chromium	18,000	18,000	D&G=B			1,220	1,460	3,350	2,050	3,260	4,240	1,220	2,920	2,870	1,980	2,560	4,540	610	1,460	2,860	5,890
Copper	5,800,000	120,000	GX			1,700	2,300	8,200	7,400	6,100	11,400	3,400	3,100	5,600	1,600	3,000	5,800	1,200	3,900	5,600	5,300
Lead	700,000	5,000,000	GX			2,510	3,120	7,580	13,800	5,100	8,590	2,280	3,790	5,470	4,710	5,740	7,330	950	6,250	11,400	6,950
Selenium	4,000	410	G=B					210			210			160							
Zinc	2,400,000	2,600,000	G=B			4,600	5,100	19,000	11,400	12,200	20,800	5,900	8,600	14,700	3,700	10,300	20,300	2,400	6,000	13,200	9,900
ANALYTE (ug/kg)	**DW**	GSI																				
2 Butanone (MEK)	260,000	44,000				45	71	56		165	79	82	150	75	46	66	148	126	44	123	127
Acetone	15,000	NC																			
Vinyl Chloride	40	260									23										
1,1-Dichloroethene	140	2,600																			
trans-1,2-Dichloroethene	2,000	30,000																			
1,1-Dichloroethane	18,000	15,000																			
Methylene chloride	5	1,500		**100**	**18**																
cis-1,2-Dichloroethene	1,400	12,000		**1,600**				58			350										
Tetrahydrofuran	1,900	220,000				170	190	190	150	180	180	140	190	210	190	190	170	190	150	150	140
Chloroform	1,600	7,000									16										
1,1,1-Trichloroethane	4,000	1,800									11										
Benzene	100	4,000																			
Trichloroethene	100	4,000		**14,400**	41			**1,420**			**3,650**										
Tetrachloroethene	100	1,200			18																
Toluene	16,000	5,400				11															
Ethylbenzene	1,500	360																			
Total Xylenes	5,600	820			39																
Isopropylbenzene	91,000	3,200			65															16	
n-Propylbenzene	1,600	NC																			
1,2 -Dichlorobenzene	14,000	280																		21	
1,2,4-Trimethylbenzene	2,100	570			37																
1,2,3-Trimethylbenzene	NC	NC			42.1															13.5	
1,3,5-Trimethylbenzene	72	45			29																
p-isopropyltoluene	NC	NC			93																
1,2,3-Trichlorobenzene	NC	NC																			
Naphthalene	35,000	730			210	10.8			14.4	17		13.7			12.9		14.3			345.7	46.9
2-Methylnaphthalene	57,000	4,200			345	10.2			14	39		13	19				30		10	820	46

NOTES:

	Blank cells indicate no detectable c
X	Exceeds DW criteria
X	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria
X	Compound also found in associatec
NC	Insufficient data to develop criterion
GX	Interface Criteria - calculated based on 257ppm total hardness

TABLE 2
SOIL ANALYTICAL DATA (Metals and Detected VOCs)
RACER - Flint West #12990

				Sample ID:	SB129-4	SB129-8	SB129-18	SB130-4	SB130-10	SB130-18	SB131-4	SB131-10	SB131-18	SB132-12	SB132-15	SB133-17	SB133-19	SB133-20	SB134-18	SB134-20	SB135-19	SB135-21
				Date Collected:	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	4/22/14	7/10/14	7/10/14	7/10/14	7/10/14	7/10/14	12/22/14	12/22/14	12/22/14	12/22/14
				Depth:	4	8	18	4	10	18	4	10	18	12	15	17	19	20	18	20	19	21
ANALYTE (ug/kg)	**DW**	GSI																				
Arsenic	5,800	5,800	D&G=B	2,790	1,740	1,460	3,580	1,700	1,980	1,630	1,300	2,080						380	1,690	1,900	2,080
Chromium	18,000	18,000	D&G=B	2,550	4,080	4,730	3,090	1,150	2,770	1,640	2,800	2,620									
Copper	5,800,000	120,000	GX	13,000	3,600	7,200	17,700	1,700	9,800	8,500	3,100	7,900						4,500	3,000	4,000	3,900
Lead	700,000	5,000,000	GX	104,000	6,100	7,420	123,000	2,110	6,510	36,400	4,740	6,020						5,690	3,380	2,850	2,890
Selenium	4,000	410	G=B	130		150	140														
Zinc	2,400,000	2,600,000	G=B	21,300	13,100	19,200	51,800	5,800	18,000	16,800	13,600	18,600						5,900	19,500	17,500	15,300
ANALYTE (ug/kg)	**DW**	GSI																				
2 Butanone (MEK)	260,000	44,000		40	53	82	69	68	70	79	65	164									
Acetone	15,000	NC																			
Vinyl Chloride	40	260							**73**			**90**	**180**	**89**	**46**					14	
1,1-Dichloroethene	140	2,600							34			18									
trans-1,2-Dichloroethene	2,000	30,000							100			62			18					11	
1,1-Dichloroethane	18,000	15,000							69			35			13						
Methylene chloride	5	1,500																			
cis-1,2-Dichloroethene	1,400	12,000				300			**6,380**			**2,820**	**2,200**	1,200	**1,990**	530	270		120	1,100	800
Tetrahydrofuran	1,900	220,000		150	180	180	180	170	160	150	180	160	1,500	300	150	160	117				
Chloroform	1,600	7,000																			
1,1,1-Trichloroethane	4,000	1,800				33.40									25	35	18				8.7
Benzene	100	4,000							36												
Trichloroethene	100	4,000				**6,170**			**6,080**	28		**12,160**	**29,500**	**13,700**	**11,680**	**10,860**	**7,520**		**2,040**	**7,890**	**6,540**
Tetrachloroethene	100	1,200														17					
Toluene	16,000	5,400		13		19	31			45								70			
Ethylbenzene	1,500	360					15											16			
Total Xylenes	5,600	820		21			92			91								85			
Isopropylbenzene	91,000	3,200					13														
n-Propylbenzene	1,600	NC					16											14			
1,2 -Dichlorobenzene	14,000	280																			
1,2,4-Trimethylbenzene	2,100	570		14			24			22											
1,2,3-Trimethylbenzene	NC	NC					13.4			11.8											
1,3,5-Trimethylbenzene	72	45																			
p-isopropyltoluene	NC	NC																			
1,2,3-Trichlorobenzene	NC	NC																			
Naphthalene	35,000	730		39.5	12.5		51.5			100.3								36.6			
2-Methylnaphthalene	57,000	4,200		43			54.1			71.8						15	12	9.2	29			

NOTES:

	Blank cells indicate no detectable c
X	Exceeds DW criteria
X	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria
X	Compound also found in associatec
NC	Insufficient data to develop criterion
GX	Interface Criteria - calculated based on 257ppm total hardness

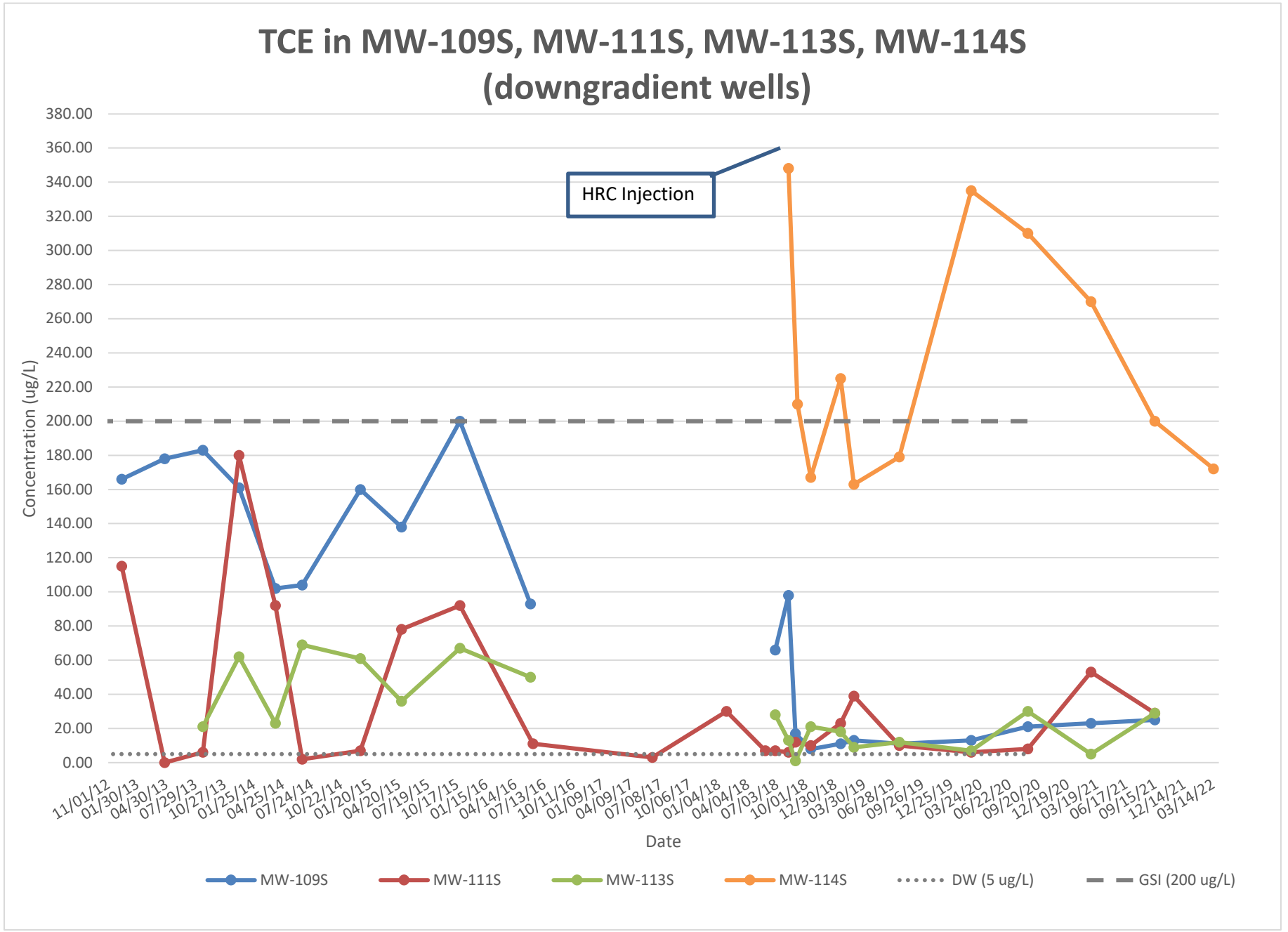
TABLE 2
SOIL ANALYTICAL DATA (Metals and Detected VOCs)
RACER - Flint West #12990

				Sample ID:	SB136-19	SB136-21	SB137-18	SB137-20.5	SB138-15	SB138-18	SB139-16	DUP-1	SB139-18	SB140-16	SB140-19	SB141-16	SB141-18	SB141-19
				Date Collected:	12/22/14	12/22/14	12/22/14	12/22/14	1/16/2019	1/16/2019	1/16/2019	1/16/2019	1/16/2019	1/16/2019	1/16/2019	1/16/2019	1/16/2019	1/16/2019
				Depth:	19	21	18	20.5	15	18	16	(SB139-16)	18	16	19	16	18	19
ANALYTE (ug/kg)	**DW**	GSI																
Arsenic	5,800	5,800	D&G=B	1,870	3,350	1,660	3,040											
Chromium	18,000	18,000	D&G=B															
Copper	5,800,000	120,000	GX	4,600	4,300	4,200	4,500											
Lead	700,000	5,000,000	GX	3,060	3,740	2,810	3,240											
Selenium	4,000	410	G=B															
Zinc	2,400,000	2,600,000	G=B	13,600	18,800	13,500	27,300											
ANALYTE (ug/kg)	**DW**	GSI																
2 Butanone (MEK)	260,000	44,000												2,300				
Acetone	15,000	NC											430					360
Vinyl Chloride	40	260						**56**					**42**					
1,1-Dichloroethene	140	2,600											63					
trans-1,2-Dichloroethene	2,000	30,000				14				13			200					
1,1-Dichloroethane	18,000	15,000											90					
Methylene chloride	5	1,500							**22**	**25.7**	**230**	**210**	**32**	**260**	**30**	**27**	**25**	**26**
cis-1,2-Dichloroethene	1,400	12,000		340	450	670	290	470	550	**1,800**	1000	**8,850**	**3,500**	150	15	**2,900**	860	
Tetrahydrofuran	1,900	220,000						174	121	1,800	1750	180	1,800	155	161	170	155	
Chloroform	1,600	7,000																
1,1,1-Trichloroethane	4,000	1,800		12.5		20.5			7.4					14.8				
Benzene	100	4,000											20					
Trichloroethene	100	4,000		**8,760**	**9,390**	**4,250**		**2,880**	**2,300**	**21,000**	**16,300**	**3,440**	**13,100**	**2,870**	**180**	**6,150**	**3,370**	
Tetrachloroethene	100	1,200												11.9				
Toluene	16,000	5,400																
Ethylbenzene	1,500	360																
Total Xylenes	5,600	820																
Isopropylbenzene	91,000	3,200																
n-Propylbenzene	1,600	NC																
1,2 -Dichlorobenzene	14,000	280								136								
1,2,4-Trimethylbenzene	2,100	570																
1,2,3-Trimethylbenzene	NC	NC																
1,3,5-Trimethylbenzene	72	45																
p-isopropyltoluene	NC	NC																
1,2,3-Trichlorobenzene	NC	NC												130				
Naphthalene	35,000	730																
2-Methylnaphthalene	57,000	4,200																

NOTES:

	Blank cells indicate no detectable c
X	Exceeds DW criteria
X	Exceeds GSI criteria
X	Exceeds both DW and GSI criteria
X	Compound also found in associatec
NC	Insufficient data to develop criterion
GX	Interface Criteria - calculated based on 257ppm total hardness

APPENDIX C: TCE GRAPH


TCE in MW-109S, MW-111S, MW-113S, MW-114S
(downgradient wells)
HRC Injection
Concentration (ug/L)
380.00
360.00
340.00
320.00
300.00
280.00
260.00
240.00
220.00
200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
11/01/12
01/30/13
04/30/13
07/29/13
10/27/13
01/25/14
04/25/14
07/24/14
10/22/14
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10/11/16
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07/08/17
10/06/17
01/04/18
04/04/18
07/03/18
10/01/18
12/30/18
03/30/19
06/28/19
09/26/19
12/25/19
03/24/20
06/22/20
09/20/20
12/19/20
03/19/21
06/17/21
09/15/21
12/14/21
03/14/22
Date
MW-109S
MW-111S
MW-113S
MW-114S
DW (5 ug/L)
GSI (200 ug/L)

APPENDIX D: LABORATORY DATA VALIDATION

Applied EcoSystems, Inc.
Environmental Management, Consulting & Field Services

LABORATORY DATA VALIDATION
MARCH 2022 BIANNUAL GROUNDWATER SAMPLING EVENT

RACER Trust
Flint West Industrial Land (#12990)
Glenwood Avenue and Stevenson Street
Flint, Michigan

May 13, 2022
Project # 11-4317A-102

Applied EcoSystems, Inc.
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: (810) 715-2525 Fax: (810) 715-2526
www.AppliedEcoSystems.com

TABLE OF CONTENTS

Acronyms and Abbreviations

Æ	Applied EcoSystems, Inc.
ASTM International (ASTM)	
AAI	All Appropriate Inquiry
BER	Business Environmental Risk
CREC	Controlled Recognized Environmental Condition
DMC	De Minimis Condition(s)
ESA	Environmental Site Assessment
HREC	Historical Recognized Environmental Condition
PEC	Potential Environmental Concern
REC	Recognized Environmental Condition
VEC	Vapor Encroachment Condition
Buildings, Structures, and Materials	
ACBM	Asbestos Containing Building Material
ACM	Asbestos Containing Materials
AST	Aboveground Storage Tank
HVAC	Heating, Ventilation, and Air Conditioning Systems
LUST	Leaking Underground Storage Tank
ROW	Right-of-Way
UST	Underground Storage Tank
Federal Agencies	
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
NRCS	Natural Resources Conservation Service
OSHA	Occupational Health and Safety Administration
SBA	Small Business Administration
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
Federal Environmental Regulations, Programs, and Databases	
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	CERCLA Information System
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
CORRACTS	Resource Conservation and Recovery Act Corrective Action
CWA	Clean Water Act
ERNS	Emergency Response Notification System
FOIA	Freedom of Information Act
LQG	Large Quantity Generator
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFRAP	No Further Remedial Action Planned
NPL	National Priority List
NRCS	Natural Resources Conservation Service
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SEMS	Superfund Enterprise Management System
SQG	Small Quantity Generator
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage and Disposal Facility

Hazardous Substances and Petroleum Products	
BTEX	Benzene, Toluene, Ethyl Benzene, Xylenes
CVOCs	Chlorinated Volatile Organic Compounds
MTBE	Methyl Tertiary Butyl Ether
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene, Tetrachloroethylene, Perchloroethene, Perchloroethylene, PERC
PFAS	Per- and Polyfluoroalkyl Substances, including PFOS, PFOA, GenX
PNAs	Polynuclear Aromatics - also known as Polycyclic Aromatic Hydrocarbons (PAHs)
SVOCs	Semi-Volatile Organic Compounds
TCE	Trichloroethene, Trichloroethylene
TMBs	Trimethylbenzenes
VOCs	Volatile Organic Compounds
Mapping, Instruments and Units of Measurement	
bgs	Below Ground Surface
GIS	Geographic Information System
msl	Mean Sea Level
PID	Photoionization Detector
ppb	Parts Per Billion
ppb(v)	Parts Per Billion by Volume
ppm	Parts Per Million
ppm(v)	Parts Per Million by Volume
T/R/S	Township, Range, Section
µg/Kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
ng/Kg	Nanograms per Kilogram
ng/L	Nanograms per Liter
Michigan-Specific	
BEA	Baseline Environmental Assessment
NREPA	Natural Resources and Environmental Protection Act
EGLE	Michigan Department of Environment, Great Lakes and Energy and its predecessors below:
MDEQ	Michigan Department of Environmental Quality
MDNRE	Michigan Department of Natural Resources and Environment
MDNR	Michigan Department of Natural Resources
LARA	Michigan Department of Licensing and Regulatory Affairs
GRCC	Generic Residential Cleanup Criteria (or Criterion)
DW/DWP	Drinking Water/Drinking Water Protection
DC	Direct Contact
F/E	Flammability/Explosivity Limit
GSI/GSIP	Groundwater to Surface Water Interface/Groundwater to Surface Water Interface Protection
PI	Particulate Inhalation
VIA	Volatilization to Indoor Air
VOA	Volatilization to Outdoor Air
MI 10 Metals	Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, and Zinc
LGP	Leaded Gasoline Indicator Parameters (includes BTEX, TMBs and other compounds)
ULGP	Unleaded Gasoline Indicator Parameters (includes BTEX, MTBE, TMBs and other compounds)

1. INTRODUCTION

Applied EcoSystems, Inc. (Æ) was retained to conduct a validation review of the laboratory analytical data collected in support of the 2022 March bi-annual groundwater sampling event at the RACER Flint West #12990 Site. The sampling was performed in accordance with the requirements of the September 29, 2011 RCRA Administrative Order on Consent between the U.S. Environmental Protection Agency (USEPA) and RACER for the Flint West Site, and the Laboratory Data Validation was performed as part of the requirements of the April 1, 2021 project Quality Assurance Project Plan (QAPP).

Groundwater samples were submitted to Merit Laboratories, Inc. of East Lansing, Michigan. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. Samples were prepared at the laboratory in accordance with their standard operating procedures for groundwater processing. A summary of the analytical methodology is presented in Table 3.

Standard report deliverables were submitted by the laboratory to Æ. The final results and supporting quality assurance/quality control (QA/QC) data were assessed by Æ, as documented herein. Data evaluation was based on information obtained from the chain of custody forms, field notes, finished report forms, method blank data, duplicate data, and recovery data from surrogate spikes and laboratory control spikes (LCS) and matrix spikes (MS)/matrix spike duplicates (MSD).

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods reference in Table 3, in the April 1, 2021 project QAPP, and in applicable guidance documents (hereafter identified as "Guidelines"), including:

- Michigan Department of Environment, Great Lakes, and Energy (EGLE) Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Minimum Laboratory Analyte List, updated March 8, 2021.
- Michigan Department of Environmental Quality (MDEQ), now Department of Environment, Great Lakes and Energy (EGLE), Application of Target Detection Limits and Designated Analytical Methods, dated March 2016;
- MDEQ, General PFAS Sampling Guidance, revised October 16, 2018
- USEPA, Superfund Contract Laboratory Program, National Functional Guidelines for Organic Superfund Methods Data Review (SOM02.4), EPA-540-R-2017-002, dated January 2017;
- USEPA, Superfund Contract Laboratory Program, National Functional Guidelines for Inorganic Superfund Methods Data Review (ISM02.4), EPA-540-R-2017-001, January 2017;
- USEPA, PFAS Methods and Guidance for Sampling and Analyzing Water and Other Environmental Media-Technical Brief, EPA/600/F-17-022h; and
- USEPA, Region 9, Laboratory Data Review for the Non-Chemist, dated October 2014.

1.1 Property Location and Description

Property Address:	Glenwood Avenue and Stephenson Street
Municipality:	City of Flint, Michigan
County:	Genesee
T/R/S	T7N, R6E, S12
Parcel ID:	40-13-177-002
Land Area:	3.17 acres, per tax records.

2. LABORATORY DELIVERABLES

Four (4) laboratory reports were received from Merit Laboratories, two (2) for chains-of-custody prepared for groundwater samples collected by Æ on March 16, 2022 for PFAS analysis, and three (3) for chains-of-custody prepared for samples collected by Æ on March 16, 2022 for analysis of VOCs and dissolved and total metals (arsenic, chromium-total, chromium-hexavalent, copper, lead, selenium, and zinc). All laboratory reports were identified as Merit Laboratories' Level II deliverables, appropriate under USEPA guidelines for desktop review. Raw laboratory data, including GC/MS scans, instrument calibration data, etc., were not included in the deliverables.

Deliverables included the Merit Laboratories Analytical Laboratory Reports and Quality Control Reports IDs listed following and included in Appendix B:

S33914.01 (VOCs & Metals),
S33923.01 (PFAS),
S33939.01 (PFAS), and
S33940.01 (VOCs & Metals).

3. DESKTOP LABORATORY DATA REVIEW

Deliverables were reviewed to verify that the following reporting information was documented fully. Where problems were identified, limitations on data validity were evaluated based on the identified concerns.

All Analytical Laboratory Report cover sheets were signed by Maya Murshak, Technical Director of Merit Laboratories, Inc.

All Quality Control Report cover sheets were signed by Barbara Ball, Quality Assurance Manager of Merit Laboratories, Inc.

3.1 Case Narratives

The case narrative typically is a short summary statement about the analyses that commonly documents any significant concerns with the condition of received samples, analytical problems, or QA/QC concerns. All deliverables identified no conditions warranting narrative beyond general laboratory reporting information.

3.2 Laboratory Accreditation/Certification Information

The following laboratory certifications were identified on each Analytical Laboratory Report:

Authority	Certification ID
Michigan DEQ (EGLE)	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENA	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Details of laboratory certifications and accreditations are appended to the Project QAPP.

3.3 Laboratory Contact Information

Each Analytical Laboratory Report identifies the following laboratory contact information:

Merit Laboratories, Inc., 2680 East Lansing Drive, East Lansing, MI 48823

Phone: (517) 332-0167 Fax: (517) 332-6333

Contacts for Laboratory Report questions:

John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

3.4 Time Samples Collected, Received, Prepared, and Analyzed

Sample collection dates and times were tabulated in the Sample Summary of each Analytical Laboratory Report, identified in the header of each sample data report, and on the chain of custody appended to each Report.

Times and dates of sample receipt were documented on the chain of custody appended to each Report but were not documented in the Sample Container/Preservation/Temperature summary for each sample data report.

Times and dates of sample extraction and preparation were documented in the Extraction/Prep. Summary for each sample data report.

Dates and times of sample analyses for each analytical method were documented in each sample data report.

No deviations from Guidelines were identified.

3.5 Laboratory Analytical Methods

Laboratory analytical methods were summarized in the Method Summary of each Analytical Laboratory Report and for each analyte group documented in each sample data report. Analytical methods used for this project were as follows:

Method	Version	Analytes
E200.8	EPA Method 200.8 Revision 5.4	Arsenic, chromium, copper, lead, selenium, zinc
SM3500-Cr B	Standard Method 3500 Cr B 2011	Chromium VI
SW3015A	SW 846 Method 3015A Revision 1 February 2007	Metals digestion
SW5030C/8260C	SW 846 8260C Revision 3 August 2006 5030C Revision 3 May 2003	VOCs
ASTMD7979-19M	ASTM Method D7979-19 Modified (Isotopic Dilution)	PFAS, EGLE 28 Parameters

3.6 Analyte Reporting

Analytes were reported to significant figures established by Method Detection Limits (MDLs).

Results not detected at or above the laboratory's MDL and Reporting Limit (RL) were identified as "Not Detected."

The laboratory reported detected results down to the laboratory's MDL for each analyte adjusted for specific sample dilutions, weights, and volumes. For metals, positive analyte detections less than the RL but greater than the MDL were indicated by "b" in Table 2. For organic analytes, positive analyte detections less than the RL but greater than the MDL were qualified as estimates, indicated by "J" in Table 2 unless qualified otherwise in this report.

3.7 Holding Times and Sample Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times. No associated qualifiers were identified.

The samples were preserved properly, delivered on ice, and received and stored at the laboratory at the required temperature (0-6° Celsius). Acid-preserved samples for total metals analysis were received at pH levels less than 2. Samples for dissolved metals analysis (including total and dissolved chromium VI) were filtered in the laboratory immediately upon receipt at the laboratory to limit potential for metals to be deposited to or leached from suspended solids in the samples. Laboratory results for dissolved metals were qualified with an "f" in analytical reports to indicate filtration and preservation were performed in the laboratory. The laboratory did not identify that qualifier in Report S28171.01.

Holding times for indicated extraction time for all PFAS analyses did not exceed the applicable 14-day extraction timeframe (*see* Table 3), and all analyses were conducted within the 28-day holding time.

3.8 Units of Measurement

Units of measurement are identified on each sample report of the Analytical Laboratory Reports. Units for each analyte group are as follow:

Analyte Group	**Units**
Metals (including Cr VI)	milligrams per liter (mg/L)
VOCs	micrograms per liter (µg/L)
PFAS	nanograms per liter (ng/L)

Individual tables in project reports may identify concentrations equivalently in different units of measurement. Table 2 of this report identifies metals concentrations (including Cr VI) in micrograms per liter.

3.9 Detection/Reporting Limits

Each sample report of the Analytical Laboratory Reports individually tabulates the sample analytical result, Reporting Limit (RL), Method Detection Limit (MDL), and dilution factor. On Table 2, analytical results less than MDLs are identified as less than (<) the specified RL. Concentrations detected less than the RL but greater than the MDL are identified as the detected

concentration qualified with a "b" flag, and estimated concentrations less than RL but greater than MDL are qualified with a "J" flag.

3.10 Data Qualifiers

The Analytical Laboratory Reports tabulate the following qualifying flags:

Qualifier/Flag	Description
!	Result is outside of stated limit criteria
1, 2	Spiked at specific concentration
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis ran outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDLL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory, with separately attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
c	Filtered in lab
e	Reported value estimated due to interference
f	Filtered and preserved in lab
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak
x	Preserved from bulk sample

Of these qualifiers, the following were determined to be applicable to one or more sample laboratory results in Table 2:

Qualifier/Flag	Applicable Samples
1, 2	MS-MW-103S – CR VI, VOCs MSD-MW-103S - VOCs
b	MW-103S – Total Cr, Zn; Dissolved Cr, Zn, MW-104S – Total As, Cu, Se, Zn; dissolved As, Cr, Cu, Se, Zn MW-106SR – Total, As, Pb, Se; dissolved As, Cr, Cu, Se MW-108S – Total As, Cr, Cu, Se, Zn; dissolved Cr, Cu, Se, Zn MW-110S – Total Cr, Cu Pb; dissolved As, Cr MW-112S – Total Cr, Zn; dissolved Cr, Zn MW-114S – Total Cr, Cu, Pb; dissolved Cr MW-117S – Total As, Cu, Zn; dissolved As, Cr, Cu, Zn FB-1 – Total Cr, Cu, Zn; dissolved As, Cr, Zn

Qualifier/Flag	Applicable Samples
	EB-1 – Total Ar, Cr, Zn; dissolved Ar, Cr, Zn Dupe-1 (MW-114S) – Total Cr, Cu, Pb; dissolved Cr
c	All analyses performed for dissolved Cr VI
f	All analyses performed for dissolved metals, other than Cr VI
B	MW-103S – Carbon disulfide, 2-Methylnaphthalene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene MW-104S – Carbon disulfide MW-106SR – Carbon disulfide MW-108S - Carbon disulfide MW-110S – Carbon disulfide MW-112S – Carbon disulfide MW-114S – Carbon disulfide MW-117S – Carbon disulfide, FB-1 – Carbon disulfide, 2-Methylnaphthalene EB-1 – Carbon disulfide, Methylene chloride, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene, naphthalene, 2-Methylnaphthalene Dupe-1 (MW-114S) – Carbon disulfide Trip Blank – Carbon disulfide, Tetrahydrofuran
I	MW-103S – 4:2 FTS, 6:2 FTS, 8:2 FTSA MW-112S – 4:2 FTS, 6:2 FTS, 8:2 FTSA
J	MW-103S – Carbon disulfide, vinyl chloride, cis-1,2-Dichloroethene, benzene, chlorobenzene, 2-Methylnaphthalene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene, PFBS, MS-MW-103S – Acetone, Tetrahydrofuran MSD-MW-103S – Acetone, Tetrahydrofuran MW-104S – Carbon disulfide, Chloroform, Trichloroethene, Bromodichloromethane MW-106SR – Carbon disulfide, PFPeA, PFHxS MW-108S - Carbon disulfide, Chloroform, Trichloroethene MW-110S – Carbon disulfide MW-112S – Carbon disulfide, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichlorobenzene, trans-1,2-Dichloroethene, PFBS MW-114S – Carbon disulfide, trans-1,2-Dichloroethene, Chloroform, PFHxA, PFBS MW-117S – Carbon disulfide, Chloroform, cis-1,2-Dichloroethene, EB-1 – Acetone, Carbon disulfide, Methylene chloride, Tetrahydrofuran, Toluene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene, naphthalene, 2-Methylnaphthalene Dupe-1 (MW-114S) – Carbon disulfide, Chloroform, trans-1,2-Dichloroethene FB-1 – Carbon disulfide, 2-Methylnaphthalene Trip Blank – Carbon disulfide, Methylene Chloride, Tetrahydrofuran MS-MW-103S – Acetone, Tetrahydrofuran MSD-MW-103S – Acetone, Tetrahydrofuran
X	MW-103S - PFBA MW-112S - PFBS

The qualifiers should be used by all data users to understand and appropriately apply the data.

3.11 Surrogate Recoveries

Surrogates are chemicals similar to the target analyte(s) in chemical composition and behavior that are not expected to be present in the sample(s). Surrogates are added to all environmental samples, blanks, and other QC samples in an analytical batch during the preparation stage for some organic analyses (including VOCs and PFAS in the subject laboratory analytical reports). Surrogates monitor analytical performance, especially extraction efficiency, purging efficiency (for volatiles), and possible matrix effects that MS/MSD spikes, which are added only to one sample per batch, cannot.

All surrogate recoveries identified in the laboratory analytical reports were within the percent recovery and allowable range listed for each surrogate compound, except the for the following PFAS internal standard in one matrix sample:

Sample	Analyte	Recovery of Internal Standard
MW-103S	4:2FTSA, 6:2FTSA, 8:2FTSA	Elevated
MS-MW-103S	4:2FTSA, 6:2FTSA	Elevated
MS-MW-103S	1,2,4-Trimethylbenzene	Decreased
MSD-MW-103S	4:2FTSA, 6:2FTSA, 8:2FTSA, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene	Elevated
MSD-MW-103S	Chloroethane, Bromomethane , Styrene, 1,2,4-Trimethylbenzene	Decreased
Laboratory Control Sample	trans-1,4-Dichloro-2-butene, 1,2,4-Trimethylbenzene, 1,2,3-Trichlorobenzene	Elevated
Laboratory Control Sample Duplicate	trans-1,4-Dichloro-2-butene, 1,2,4-Trimethylbenzene, 1,2,3-Trichlorobenzene	Elevated

3.12 Blank Analyses

Blanks are designated to measure cross-contamination in different parts of the sampling and analytical process.

3.12.1 Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect.

3.12.2 Equipment Blank Analyses

Equipment blanks are designed to monitor the cleanliness of field equipment and the effectiveness of decontamination procedures if equipment is used for multiple sample collections.

For this study, laboratory equipment blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per batch.

All equipment blank analyses were non-detect, except as noted in Table 2 and summarized following:

Laboratory Report	Equipment Blank	Detected Analytes
S-33939.01	EB-1 (03/16/2022)	Total Ar, Cr & Zn detected <RL but >MDL Dissolved Ar, Cr & Zn detected <RL but >MDL Acetone <RL but >MDL Carbon disulfide <RL but >MDL Methylene chloride <RL but >MDL Tetrahydrofuran <RL but >MDL Toluene <RL but >MDL 1,2,4-Trichlorobenzene <RL but >MDL 1,2,3-Trichlorobenzene <RL but >MDL Naphthalene <RL but >MDL 2-Methylnaphthalene <RL but >MDL
S-33940.01	EB-1 (03/16/2022)	PFAS not detected

Based on the equipment blanks, equipment was not considered to result in detectable concentrations greater than RLs and not likely to affect sample result comparisons to cleanup criteria.

Detection of low levels of zinc and chromium in equipment blanks commonly indicates contributions from stainless steel equipment. Because acetone was detected at a low concentration in the equipment blank and not detected in the laboratory method blank, that detection likely was a result of decontamination residuals on the equipment.

3.12.3 Trip/Field Blank Analyses

Trip/Field Blanks are designated to measure cross-contamination that may occur during sample handling and transport, such as from a broken bottle in the sample ice chest.

All trip/field blank analyses were non-detect, except as noted following:

Laboratory Report	Trip/Field Blank	Detected Analytes
S-33914.01	FB-1 (03/16/2022)	Total Cr, Cu, Zn <RL but >MDL Dissolved As, Cr, Zn <RL but >MDL Carbon disulfide <RL but >MDL 2-Methylnaphthalene <RL but >MDL
S-33914.01	Trip Blank (09/16/2021)	Carbon disulfide <RL but >MDL Methylene chloride <RL but >MDL

		Tetrahydrofuran<RL but >MDL
S-33939.01	Trip Blank (03/16/2022)	PFAS not detected
S-33923.01	FB-1 (03/16/2022)	PFAS not detected

Based on the trip/field blanks, sample handling was not considered to result in detectable concentrations greater than RLs and not likely to affect sample result comparisons to cleanup criteria.

3.13 Laboratory Control Sample Spike Analyses

Laboratory Control Samples (LCS) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines." All LCS recoveries were within the control limits demonstrating acceptable analytical accuracy, except as discussed following:

> LCS and LCSB in Batch 220323B9 in Merit Report S33940 identified recovery for trans-1,4-Dichloro-2-butene and 1,2,4-Trimethylbenzene to be slightly less than the acceptable recovery limit, indicating a potential for trans-1,4-Dichloro-2-butene concentrations to be reported low. Compound 1,2,3-Trichlorobenzene in the same samples was reported slightly more than the acceptable recovery limit, indicating a potential for trans-1,4-Dichloro-2-butene concentrations to be reported high. Potentially affected field samples included all groundwater samples and quality-control samples collected for VOC analysis.

3.14 Matrix Spike and Matrix Spike Duplicate Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, selected field samples are spiked with a known concentration of the analyte of concern and analyzed as Matrix Spike (MS)/Matrix Spike Duplicate (MSD) samples. The Relative Percent Difference (RPD) between the MS and MSD is used to assess analytical precision.

If the original sample concentration is significantly greater than the spike concentration, or if sample is diluted five times or greater, the recovery is not assessed.

If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD.

MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with analytes of interest, and the results were evaluated using the "Guidelines." Table 4 presents the outlying matrix spike results. The associated sample data were qualified as estimated in Table 2. The remaining percent recoveries and RPD values were within the control limits criteria.

All of the matrix spikes and matrix spike duplicates were identified as falling within Control Limits except MS/MSDs associated with analysis of MW-103S (*see* Table 4). The MS/MSDs identified exceedances of the upper control limit for VOCs 1,2,4-Trichlorobenzene, and 1,2,3-Trichlorobenzene; and PFAS 4:2FTSA, 6:2FTSA, 8:2FTSA. The MS/MSDs identified exceedances of the lower control limit for VOCs Bromomethane, Chloroethane, Styrene and 1,2,4-Trimethylbenzene. These compounds were not COCs at the site and were not detected in MW-103S. The inferred associated matrix interferences were not considered to affect report conclusions.

3.15 Interferences

Interference is bias that is introduced because something in the sample interferes with the analytical system's ability to provide an accurate measurement. The interference may be physical (such as turbidity that could block light transmission in an analysis based on UV absorbance), chemical (a chemical similar to the analyte of interest may react with that analyte affect instrument response), or spectroscopic (with the detector receiving an enhanced or suppressed signal due to an emission or absorbance by some other chemical or material in the matrix). Interferences can be possible or negative. Significant analytical interferences and their effects on the data are identified in the laboratory's case narrative.

No significant interferences were reported in the laboratory's case narratives; however, elevated PFAS detection limits were identified due to matrix interference in MW-103S (PFBA), and MW-112S (PFBA). No concentrations of these PFAS constituents were identified in any of the groundwater samples collected exceeding RLs.

Additionally, high target concentrations necessitating more than 2.5-times dilutions were not required for any of the analyses.

3.16 Field Duplicate Sample Analyses

One field duplicate sample was collected for purposes of evaluating field QA/QC. The field duplicate sample was submitted "blind" to the laboratory, as specified in Table 1 and chains of custody. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

The field duplicate results shown in Table 5 were within acceptable agreement less than 30%, demonstrating acceptable sampling.

3.18 Chain-of-Custody Forms

Each Merit Analytical Laboratory Report and Quality Control Report was accompanied by a copy of the appropriately executed chain of custody.

3.19 Laboratory Sample Receipt Checklist

Each Merit Analytical Laboratory Report is accompanied by a Merit Laboratories Login Checklist that documented sample conditions on receipt, chain of custody, preservation, and bottle conditions.

All samples were identified as received via courier pickup on ice at temperatures within 2-4 degrees Celsius and transferred to appropriate refrigeration.

All chains of custody were reported to be received adequately filled out, signed, and matched sample labels provided.

No requirement for subcontract laboratory analyses was identified.

All bottles were identified as appropriate and supplied by Merit, intact, filled appropriately, and submitted within holding times.

All samples were received with appropriate preservation, except:

> Samples submitted for dissolved metals (including chromium VI) analyses on chains of custody for Merit Analytical Laboratory Reports S33914, and S33940 required laboratory filtration and preservation.

4. FINDINGS, CONCLUSIONS, AND DATA LIMITATIONS

On March 16, 2022, Æ collected groundwater samples from eight monitoring wells at the RACER Flint West industrial Land site using USEPA low-stress protocols. One duplicate sample, one field blank, and one matrix spike sample and duplicate were collected. Samples were collected in appropriate laboratory-provided bottles with laboratory-provided preservatives and maintained on ice until delivery under complete chain-of-custody protocols to Merit Laboratories within appropriate holding times. No sample condition issues were identified in the field or upon laboratory receipt. Samples were analyzed by specified standard methods for VOCs, EGLE 28 PFAs, six total and dissolved metals, and total and dissolved chromium VI. Filtration and preservation for dissolved metals and chromium VI were performed immediately upon laboratory receipt instead of during field collection.

Laboratory deliverables include four laboratory reports, quality control reports, and chains-of-custody, one from the sampling date for PFAS and one from the sampling date for VOCs and metals. Each laboratory report contained a case narrative, laboratory accreditation/certification information, laboratory contact information, analytical methods, and analyte reporting relative to method detection limits (MDLs) and reporting limits (RLs). Data qualifiers were identified and evaluated in this Laboratory Data Validation report (*see* Table 2). No samples were analyzed beyond their holding time. Metals and PFAS extraction dates identified in the laboratory reports indicate that extractions occurred within their approved timeframes.

All surrogate recoveries were within their allowable ranges for each surrogate compound, except PFAS 4:2FTSA, 6:2FTSA, 8:2FTSA and VOCs 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene were elevated in the sample duplicate; and VOCs Bromomethane, Chloroethane, Styrene and 1,2,4-Trimethylbenzene. Were decrease in the sample duplicate, indicating satisfactory laboratory performance overall. Analysis of blank samples identified no indications of cross-contamination. Analysis of equipment blanks were non-detect except for low concentrations of metals and common solvent VOCs (less than RLs but greater than MDLs) used in laboratory and field equipment or decontamination. Field blanks identified only low levels of VOC and metal analytes consistent with cross-contamination identified in equipment blanks. Accordingly, no cross-contamination was indicated affecting contaminant concentrations less than RLs. Laboratory Control Spike (LCS) and LCS Duplicate analyses indicated potential for PFAS analyte PFOS to be reported low. Similarly, matrix spikes and their duplicates identified no interferences in detected analytes. No significant data qualifiers were identified in relation to detected analyte concentrations.

Based on the assessment detailed in the foregoing QA/QC summary, the laboratory data summarized in Table 2 are considered acceptable with the specific qualifications noted herein.

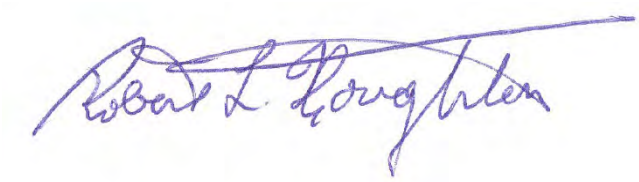
5. SIGNATURES

This report was prepared under the supervision of the following Environmental Professionals as defined in §312.10 of 40 CFR 312.

May 13, 2022

Michael D. Smith, Environmental Professional
Senior Technical Manager

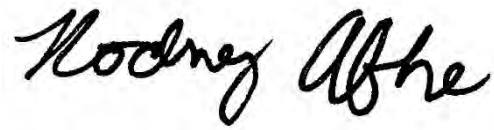
Date



May 13, 2022

Robert L. Houghton, Environmental Professional,
Æ Senior Technical Advisor,
Æ Quality Assurance Officer

Date

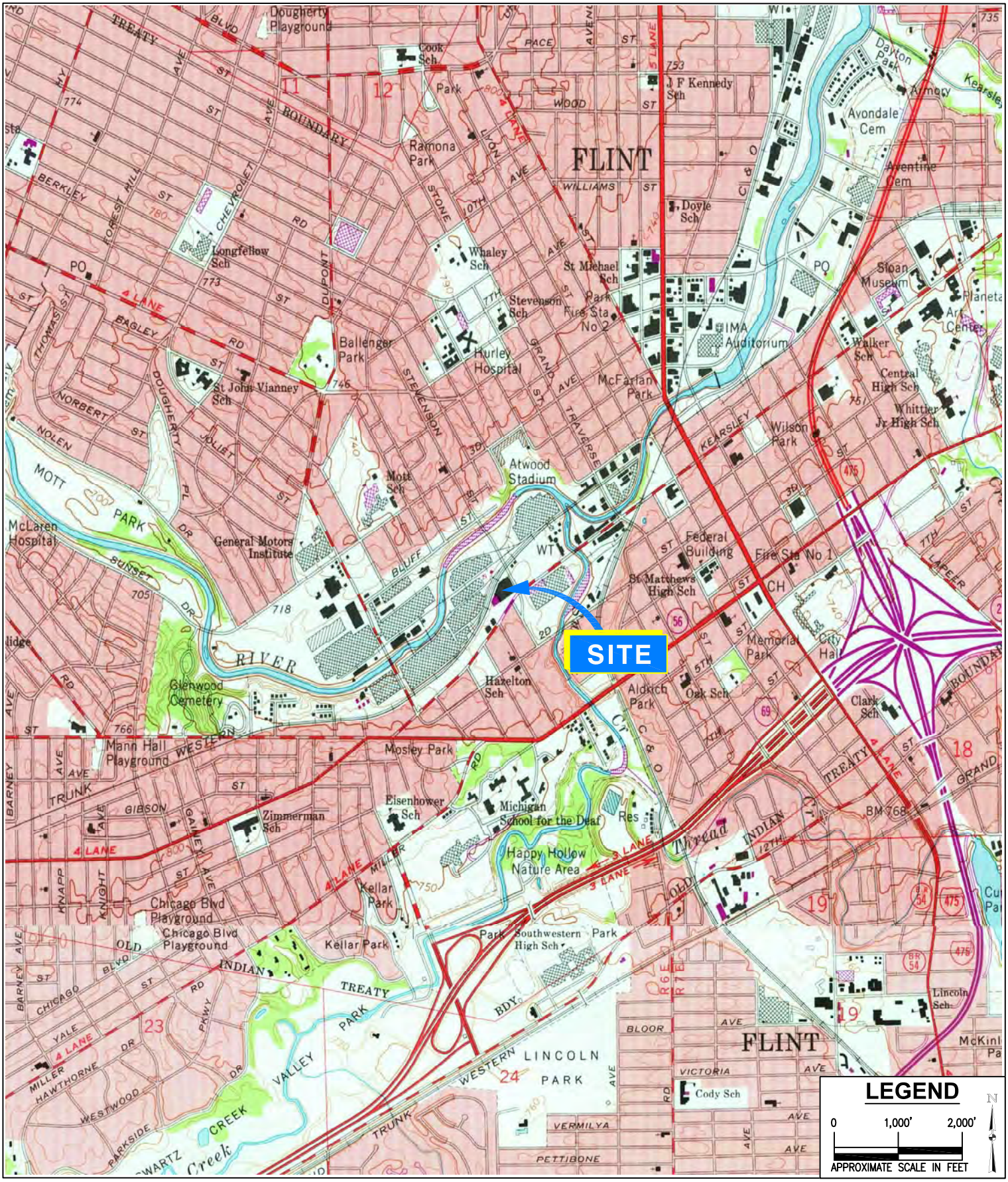


May 13, 2022

Rodney Abke
Æ Project Manager

Date

APPENDIX A: FIGURES



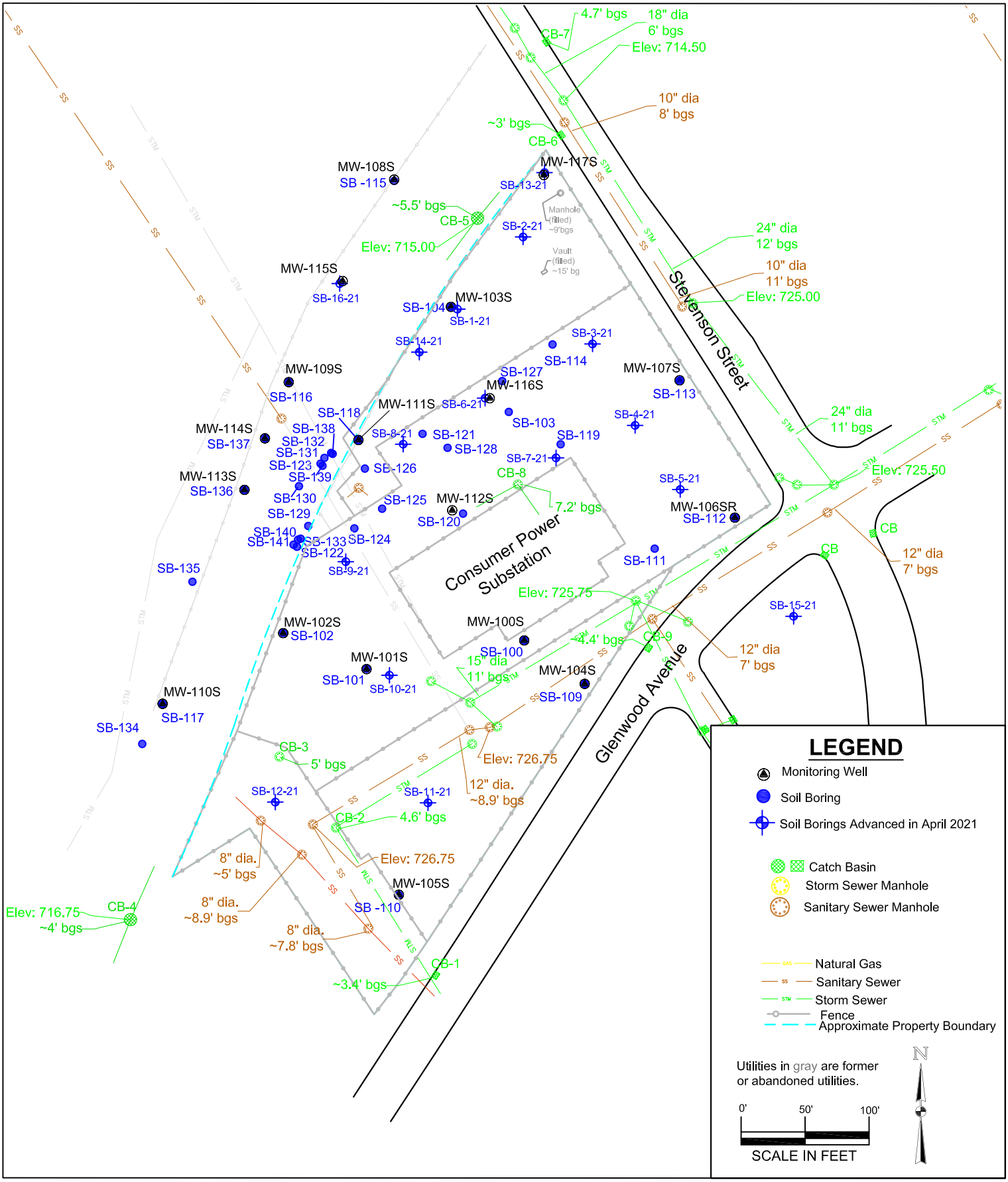
Applied EcoSystems, Inc.
Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: 810.715.2525; Fax: 810.715.2526

Site Location Map

RACER Flint West #12990
Glenwood Avenue & Stevenson Street
Flint, Michigan

SOURCE: USGS FLINT SOUTH QUADRANGLE (PROVISIONAL EDITION 1975)

DRAWING DATE:	CHECKED BY:
04/06/2020	MDS
PROJECT:	**FIGURE:**
11-4317-102	1



Applied EcoSystems, Inc.
Environmental Management, Consulting & Field Services
G-4300 South Saginaw Street, Burton, Michigan 48529
Phone: 810.715.2525; Fax: 810.715.2526

Site Map

Racer Flint West -12990
Flint West Industrial Land, Flint, Michigan

DATE:	CHECKED BY:
01/20/2022	MDS
PROJECT:	**FIGURE:**
11-4317-102	2

APPENDIX B: TABLES

Table 1
Sample Collection and Analysis Summary
March 2022 Semi-annual Groundwater Sampling Event
RACER Flint West #12990, Flint, Michigan

Lab Sample ID	Field Sample ID (Location)	Matrix	Collection Date/Time (mm/dd/yyyy) (hr:min)	Analytical Parameters			
				PFAS	VOCs	Total Metals	Dissolved Metals
S33914.01	FB-1	Water	03/16/2022 9:09		X	X	X
S33914.02	MW-104S-31622	Water	03/16/2022 9:49		X	X	X
S33914.03	MW-1106SR-31622	Water	03/16/2022 10:24		X	X	X
S33914.04	MW-112S-31622	Water	03/16/2022 11:03		X	X	X
S33914.05	MW-110S-31622	Water	03/16/2022 11:56		X	X	X
S33914.06	MW-108S-31622	Water	03/16/2022 12:42		X	X	X
S33914.07	MW-114S-31622	Water	03/16/2022 13:04		X	X	X
S33914.08	MW-117-31622	Water	03/16/2022 14:16		X	X	X
S33914.09	Dupe1 31622	Water	03/16/2022 13:04		X	X	X
S33914.10	Trip Blank	Water	03/16/2022 0:01		X	X	X
S33940.01	MW-103S-31622	Water	03/16/2022 15:25		X	X	X
S33940.02	MS MW-103S-31622	Water	03/16/2022 15:25		X	X	X
S33940.03	MSD MW-103S-31622	Water	03/16/2022 15:25		X	X	X
S33940.04	EB-1-31622	Water	03/16/2022 15:53		X	X	X
S33923.01	FB-1	Water	03/16/2022 9:09	X			
S33923.02	MW-106SR-31622	Water	03/16/2022 10:24	X			
S33923.03	MW-112S-31622	Water	03/16/2022 11:03	X			
S33923.04	MW-110S-31622	Water	03/16/2022 11:56	X			
S33923.05	MW-114S-31622	Water	03/16/2022 13:24	X			
S33923.06	MW-117S-31622	Water	03/16/2022 14:16	X			
S33923.07	DUP-01	Water	03/16/2022 0:01	X			
S33923.08	Trizma FB	Water	03/16/2022 0:01	X			
S33939.01	MW-103S-31622	Water	03/16/2022 15:25	X			
S33939.02	MS MW-103S-31622	Water	03/16/2022 15:25	X			
S33939.03	MSD MW-103S-31622	Water	03/16/2022 15:25	X			
S33939.04	EB-1-31622	Water	03/16/2022 15:25	X			
S33939.05	Trip Blank	Water	03/16/2022 0:01	X			

Table 2
Sample Analytical Results and Qualifiers
RACER - Flint West # 12990

Sample ID				MW-103S	MW-104S	MW-106SR	MW-108S	MW-110S	MW-112S	MW-114S	MW-117S	Dupe1	FB-1	EB-1	Trip Blank	MW-103S MS	MW-103S MSD
Date Collected				03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022
METALS ANALYTE (ug/L)	**DW**	GSI										**MW-114S**					
Arsenic, Dissolved	10	10		8 f	0.423 bf	0.616 bf	<2 f	1.91 bf	32 f	13 f	1.131 bf	11 f	0.124 bf	0.364 bf	NA	250 f	268 f
Arsenic	10	10		39	0.872 b	1.593 b	1.122 b	9	89	52	0.597 b	49	<2	0.322 b	NA	298	298
Chromium VI, Dissolved	100	11		<10 c	<10 c	<10 c	<10 c	<10 c	<10 c	<10 c	<10 c	<10 c	<10 c	<10 c	NA	<20 c	<20 c
Chromium VI	100	11		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10 b	<10	NA	<20	<20
Chromium, Dissolved	100	160	G	0.238 bf	0.725 bf	0.875 bf	0.298 bf	0.216 bf	0.38 bf	0.215 bf	0.417 bf	0.286 bf	0.229 bf	0.216 bf	NA	245 f	260 f
Chromium	100	160	G	0.258 b	106	2,020	0.364 b	2.794 b	0.368 b	0.57 b	12	0.609 b	0.203	0.075 b	NA	257	249
Copper, Dissolved	1000	20	G	<5 f	0.441 bf	0.781 bf	0.505 bf	<0.005 f	<0.005 f	<5 f	1.321 bf	<5 f	<5 f	<5 f	NA	234 f	245 f
Copper	1000	20	G	<5	1.738 b	33	0.628 b	1.805 b	<0.005	3.007 b	2.285 b	3.227 b	0.161 b	<5	NA	246	245
Lead, Dissolved	4	44	G	<3 f	<3 f	<3 f	<3 f	<3 f	<3 f	<3 f	<3 f	<3 f	<3 f	<3 f	NA	231 f	248 f
Lead	4	44	G	<3	<3	1.062 b	<3	0.99 b	<3	2.466 b	<3	2.637 b	<3	<3	NA	252	243
Selenium, Dissolved	50	5		<5 f	3.52 bf	3.6 bf	3.13 bf	<5 f	<5 f	<5 f	<5 f	<5 f	<5 f	<5 f	NA	249 f	271 f
Selenium	50	5		<5	3.7 b	3.78 b	3.16 b	<5	<5	<5	<5	<5	<5	<5	NA	272	281
Zinc, Dissolved	2400	260	G	1.75 bf	1.968 bf	10	2.015 bf	6 f	1.144 bf	12 f	1.719 bf	3 f	0.44 bf	0.461 f	NA	249 f	251 f
Zinc	2400	260	G	1.72 b	1.933 b	31 f	2.611 b	8	1.89 b	37	2.169 b	23	0.598 b	0.651 b	NA	263	262
VOC ANALYTE (ug/L)	**DW**	GSI															
Acetone	730	1700		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	14.6 J	<50	45 J	46.7 J
Acrylonitrile	2.6	2.0 (M); 1.2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	46	49
2-Butanone (MEK)	13000	2,200		<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	48	50
Benzene	5	200		0.54 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	46	43
n-Butylbenzene	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	51
Bromobenzene	18	NA		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	49
Bromochloromethane	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	49
Bromodichloromethane	80	NC		<1	0.19 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	50	48
Bromoform	80 (A,W)	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	52
Bromomethane	10	4.2; [5(M)]		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	31	27
sec-Butylbenzene	230	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	52
tert-Butylbenzene	80	ID		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	50	49
Carbon disulfide	800	NC		0.18 JB	0.19 JB	0.24 JB	0.2 JB	0.2 JB	0.23 JB	0.19 JB	0.18 JB	0.2 JB	0.26 JB	0.15 JB	0.26 JB	43	41
Carbon tetrachloride	5	38	X	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	45	43
Chlorobenzene	100	25		0.64 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49	49
Chloroethane	430	1,100		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	29	27
Chloroform	80	350		<1	0.45 J	<1	0.8 J	<1	<1	0.14 J	0.25 J	0.14 J	<1	<1	<1	49	47
Chloromethane	260	NC		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	35	34
1,1-Dichloroethane	880	740		<1	<1	<1	<1	<1	0.41 J	2	<1	2	<1	<1	<1	48	45
1,1-Dichloroethene	7	130		<1	<1	<1	<1	<1	0.38 J	1	<1	1	<1	<1	<1	43	41
1,2-Dibromo-3-chloropropane	NC	NC		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	76	84
1,2-Dibromoethane	NC	NC		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	53
1,2-Dichlorobenzene	600	13		<1	<1	<1	<1	<1	0.12 J	<1	<1	<1	<1	<1	<1	52	51
1,2-Dichloroethane	5.0 (A)	360 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	45	42
1,2-Dichloropropane	5.0 (A)	230 (X)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	45	43
1,3-Dichlorobenzene	6.6	28		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	51
1,4-Dichlorobenzene	75	17		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	50

Table 2
Sample Analytical Results and Qualifiers
RACER - Flint West # 12990

Sample ID			MW-103S	MW-104S	MW-106SR	MW-108S	MW-110S	MW-112S	MW-114S	MW-117S	Dupe1	FB-1	EB-1	Trip Blank	MW-103S MS	MW-103S MSD
Date Collected			03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022
VOC ANALYTE (ug/L)	**DW**	GSI														
cis-1,2-Dichloroethene	70	620	0.12 J	<1	<1	<1	<1	0.88 J	131	0.21 J	124	<1	<1	<1	50	47
cis-1,3-Dichloropropene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	51
Dibromochloromethane	80 (A,W)	ID	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	51	51
Dibromomethane	230	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	53	52
Dichlorodifluoromethane	1700	ID	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	51	52
Diethyl ether	10 (E)	ID	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	41	40
trans-1,2-Dichloroethene	100	1500	<1	<1	<1	<1	<1	0.13 J	0.75 J	<1	0.67 J	<1	<1	<1	46	43
trans-1,3-Dichloropropene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	58	54
trans-1,4-Dichloro-2-butene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	35	36
Ethylbenzene	74	18	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49	47
2-Hexanone	1000	ID	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	51	54
Hexachloroethane	21	6.7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	53	53
p-Isopropyltoluene	NC	NC	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	52	51
Isopropylbenzene	800	28	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	49	49
VOC ANALYTE (ug/L) {cont}	**DW**	**GSI**														
2-Methylnaphthalene	260	19	0.3 JB	<5	<5	<5	<5	<5	<5	<5	<5	0.11 JB	0.26 JB	<5	73	77
4-Methyl-2-pentanone (MIBK)	1800	ID	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	52	54
tert-Methyl butyl ether (MTBE)	40 (E)	7,100 (X)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	46	45
Methyl iodide	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	47	44
Methylene chloride	5	1500	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.12 JB	0.22 J	44	42
Naphthalene	520	11	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.12 JB	<5	57	60
n-Propylbenzene	80	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	49
Styrene	100	80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	36	34
1,1,1,2-Tetrachloroethane	77	ID	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	50	48
1,1,1-Trichloroethane	200	89	<1	<1	<1	<1	<1	<1	1	<1	1	<1	<1	<1	46	44
1,1,2,2-Tetrachloroethane	8.5	78 (X)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49	51
1,1,2-Trichloroethane	5.0 (A)	330 (X)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	51	49
1,2,3-Trichlorobenzene	NC	NC	0.14 JB	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.2 JB	<5	74	74
1,2,3-Trichloropropane	42	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	49	50
1,2,3-Trimethylbenzene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	52	50
1,2,4-Trichlorobenzene	NC	NC	0.17 JB	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.14 JB	<5	74	74
1,2,4-Trimethylbenzene	63 (E)	17	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	39	37
1,3,5-Trimethylbenzene	72 (E)	45	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	48	47
Tetrachloroethene	5	60	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	58	56
Tetrahydrofuran	95	11000	<90	<90	<90	<90	<90	<90	<90	<90	<90	<90	2.64 J	2.72 JB	44.86 J	49.19 J
Toluene	790	270	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.12 J	<1	50	48
Trichloroethene	5	200	<1	0.21 J	<1	0.18 J	<1	1	172	1	162	<1	<1	<1	50	47
Trichlorofluoromethane	2600	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	37	36
Vinyl chloride	2	13	0.21 J	<1	<1	<1	<1	2	7	<1	6	<1	<1	<1	33	31
o-Xylene	NC	NC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	48	46
p,m-Xylene	NC	NC	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	96	91
Xylenes, Total	280	49	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	144	137

Table 2
Sample Analytical Results and Qualifiers
RACER - Flint West # 12990

		Sample ID	MW-103S	MW-104S	MW-106SR	MW-108S	MW-110S	MW-112S	MW-114S	MW-117S	Dupe1	FB-1	EB-1	Trip Blank	MW-103S MS	MW-103S MSD
		Date Collected	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022
PFA ANALYTE (ng/L)	**DW**	GSI														
Perfluorobutanoic acid (PFBA)	NC	NC	<39 X	NA	<9.7	NA	<9.8	<31 X	<9.8	<10	<10	<10	<10	<11	130	120
Perfluoropentanoic acid (PFPeA)	NC	NC	<3.9	NA	1.2 J	NA	<3.9	<4.1	<3.9	<4.0	<4.1	<4.0	<4.0	<4.2	120	110
Fluorotelomer sulfonic acid (4:2 FTS)	NC	NC	<2.0 I	NA	<1.9	NA	<2.0	<2.1 I	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	100
Perfluorohexanoic acid (PFHxA)	400,000	NC	<2.0	NA	2	NA	<2.0	<2.1	1.7 J	<2.0	<2.1	<2.0	<2.0	<2.1	110	93
Perfluorobutane sulfonic acid (PFBS)	420	NC	1.6 J	NA	3.6	NA	2.3	1.5 J	1.5 J	<2.0	<2.1	<2.0	<2.0	<2.1	110	100
Perfluoroheptanoic acid (PFHpA)	NC	NC	<2.0	NA	2.2	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	96	99
Perfluoropentane sulfonic acid (PFPeS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	120	100
Fluorotelomer sulfonic acid (6:2 FTS)	NC	NC	<2.0 I	NA	<1.9	NA	<2.0	<2.1 I	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	100	110
Perfluorooctanoic acid (PFOA)	8	12,000	2.6	NA	15	NA	<2.0	<2.1	2.4	<2.0	<2.1	<2.0	<2.0	<2.1	110	93
Perfluorohexane sulfonic acid (PFHxS)	51	NC	2.1	NA	1.6 J	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	120	95
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)	NC	NC	2.1	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	100	78
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	16	15
Perfluorononanoic acid (PFNA)	6	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	83
Fluorotelomer sulfonic acid (8:2 FTS)	NC	NC	<2.0 I	NA	<1.9	NA	<2.0	<2.1 I	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	87	110
Perfluoroheptane sulfonic acid (PFHpS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	95
Perfluorodecanoic acid (PFDA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	97	92
N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	NC	NC	<3.9	NA	<3.9	NA	<3.9	<4.1	<3.9	<4.0	<4.1	<4.0	<4.0	<4.2	110	95
Perfluorooctane sulfonic acid (PFOS)	16	12	**74**	NA	11	NA	<2.0	10	**16**	<2.0	13	<2.0	<2.0	<2.1	160	170
Perfluorooctane Sulfonic Acid - LN (PFOS-LN)	NC	NC	47	NA	3.3	NA	<2.0	4.9	6.8	<2.0	5	<2.0	<2.0	<2.1	110	110
Perfluorooctane Sulfonic Acid - BR (PFOS-BR)	NC	NC	25	NA	7.8	NA	<2.0	5.6	9.6	<2.0	7.6	<2.0	<2.0	<2.1	51	52

Table 2
Sample Analytical Results and Qualifiers
RACER - Flint West # 12990

		Sample ID	MW-103S	MW-104S	MW-106SR	MW-108S	MW-110S	MW-112S	MW-114S	MW-117S	Dupe1	FB-1	EB-1	Trip Blank	MW-103S MS	MW-103S MSD
		Date Collected	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022	03/16/2022
PFA ANALYTE (ng/L)	**DW**	GSI														
Perfluoroundecanoic acid (PFUnDA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	100	97
Perfluorononane sulfonic acid (PFNS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
Perfluorododecanoic acid (PFDoDA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	97	97
Perfluorodecane sulfonic acid (PFDS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
Perfluorotridecanoic acid (PFTrDA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	120	110
Perfluorooctane sulfonamide (FOSA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
Perfluorotetradecanoic acid (PFTeDA)	NC	NC	<3.9	NA	<3.9	NA	<3.9	<4.1	<3.9	<4.0	<4.1	<4.0	<4.0	<4.2	130	110
PFA ANALYTE (ng/L) {cont}	**DW**	GSI														
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	110
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	110	100
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NC	NC	<2.0	NA	<1.9	NA	<2.0	<2.1	<2.0	<2.0	<2.1	<2.0	<2.0	<2.1	93	83
Hexafluoropropylene oxide dimer (HFPO-DA)	NC	NC	<3.9	NA	<3.9	NA	<3.9	<4.1	<3.9	<4.0	<4.1	<4.0	<4.0	<4.2	98	86

Table 2 NOTES:

DW - Drinking Water Residential Generic Criteria.

GSI - Groundwater Surface Water Interface Generic Criteria per MDEQ Surface Water Division Rule 57.

Blank cells indicate no detectable concentrations	
Exceeds DW criteria	**X**
Exceeds GSI criteria	X
Exceeds both DW and GSI criteria	**X**
Compound also found in associated method blank, suggesting a laboratory artifact.	X
Insufficient data to develop criterion/no criterion	NC
Groundwater to Surface Water Interface Criteria - calculated based on 257ppm total hardness in the Flint River	G
Not Sampled	NS
Filtered in lab	1
Filtered and preserved in lab	2
Not analyzed	NA

PFAS criteria based on EGLE proposed drinking water criteria for selected PFAS compounds.

Qualifier Description

!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Table 3
Analytical Methods and Holding Time Criteria
March 2022 Semi-annual Groundwater Sampling Event
RACER Flint West #12990, Flint, Michigan

Parameter	Analytical Method	Sample ID	Matrix	Holding Time (days)				Approved Holding Time
				Collection	Extraction	Latest Analytical	Actual Holding	
				Date/time	Date/time	Date/time	Time (days)	
Cr VI	SM3500-Cr B	FB-1	Water	03/16/2022 9:09	NA	03/16/2022 17:08	0.33	24 Hours (1 Day)
		MW-104S-31622	Water	03/16/2022 9:49	NA	03/16/2022 16:46	0.29	
		MW-1106SR-31622	Water	03/16/2022 10:24	NA	03/16/2022 17:19	0.29	
		MW-112S-31622	Water	03/16/2022 11:03	NA	03/16/2022 17:21	0.26	
		MW-110S-31622	Water	03/16/2022 11:56	NA	03/16/2022 17:26	0.23	
		MW-108S-31622	Water	03/16/2022 12:42	NA	03/16/2022 17:28	0.20	
		MW-114S-31622	Water	03/16/2022 13:04	NA	03/16/2022 17:31	0.19	
		MW-117-31622	Water	03/16/2022 14:16	NA	03/16/2022 17:46	0.15	
		Dupe1 31622	Water	03/16/2022 13:04	NA	03/16/2022 17:37	0.19	
		MW-103S-31622	Water	03/16/2022 15:25	NA	03/17/2022 14:20	0.95	
		MS MW-103S-31622	Water	03/16/2022 15:25	NA	03/17/2022 14:24	0.96	
		MSD MW-103S-31622	Water	03/16/2022 15:25	NA	03/17/2022 14:26	0.96	
		EB-1-31622	Water	03/16/2022 15:53	NA	03/17/2022 14:27	0.94	
Metals	E200.8	FB-1	Water	03/16/2022 9:09	03/24/2022 10:30	03/24/2022 11:27	8.10	180 Days
		MW-104S-31622	Water	03/16/2022 9:49	03/24/2022 10:30	03/24/2022 11:37	8.07	
		MW-1106SR-31622	Water	03/16/2022 10:24	03/24/2022 10:30	03/24/2022 11:44	8.06	
		MW-112S-31622	Water	03/16/2022 11:03	03/24/2022 10:30	03/24/2022 11:55	8.04	
		MW-110S-31622	Water	03/16/2022 11:56	03/24/2022 10:30	03/24/2022 12:01	8.00	
		MW-108S-31622	Water	03/16/2022 12:42	03/24/2022 10:30	03/24/2022 12:19	7.98	
		MW-114S-31622	Water	03/16/2022 13:04	03/24/2022 10:30	03/24/2022 12:25	7.97	
		MW-117-31622	Water	03/16/2022 14:16	03/24/2022 10:30	03/24/2022 12:30	7.93	
		Dupe1 31622	Water	03/16/2022 13:04	03/24/2022 10:30	03/24/2022 12:36	7.98	
		MW-103S-31622	Water	03/16/2022 15:25	03/24/2022 10:30	03/24/2022 12:57	7.90	
		MS MW-103S-31622	Water	03/16/2022 15:25	03/24/2022 10:30	03/24/2022 12:59	7.90	
		MSD MW-103S-31622	Water	03/16/2022 15:25	03/24/2022 10:30	03/24/2022 13:00	7.90	
		EB-1-31622	Water	03/16/2022 15:53	03/24/2022 10:30	03/24/2022 12:55	7.88	
VOCs	SW5030C/8260C	FB-1	Water	03/16/2022 9:09	NA	03/18/2022 20:27	2.47	14 Days
		MW-104S-31622	Water	03/16/2022 9:49	NA	03/18/2022 22:23	2.52	
		MW-1106SR-31622	Water	03/16/2022 10:24	NA	03/18/2022 22:42	2.51	
		MW-112S-31622	Water	03/16/2022 11:03	NA	03/18/2022 23:01	2.50	
		MW-110S-31622	Water	03/16/2022 11:56	NA	03/18/2022 23:21	2.48	
		MW-108S-31622	Water	03/16/2022 12:42	NA	03/18/2022 23:40	2.46	
		MW-114S-31622	Water	03/16/2022 13:04	NA	03/18/2022 23:59	2.45	
		MW-117-31622	Water	03/16/2022 14:16	NA	03/19/2022 0:18	2.42	
		Dupe1 31622	Water	03/16/2022 13:04	NA	03/19/2022 0:38	2.48	
		Trip Blank	Water	03/16/2022 0:01	NA	03/18/2022 20:07	2.84	
		MW-103S-31622	Water	03/16/2022 15:25	NA	03/24/2022 1:49	7.43	
		MS MW-103S-31622	Water	03/16/2022 15:25	NA	03/23/2022 22:56	7.31	
		MSD MW-103S-31622	Water	03/16/2022 15:25	NA	03/23/2022 23:15	7.33	
		EB-1-31622	Water	03/16/2022 15:53	NA	03/24/2022 1:30	7.40	
PFAS	ASTM D7979-19M	FB-1	Water	03/16/2022 9:09	03/21/2022 16:00	03/23/2022 14:23	7.22	14 Days to Extract 28 Days to Analyze
		MW-106SR-31622	Water	03/16/2022 10:24	03/21/2022 16:00	03/23/2022 14:43	7.18	
		MW-112S-31622	Water	03/16/2022 11:03	03/21/2022 16:00	03/24/2022 13:42	8.11	
		MW-110S-31622	Water	03/16/2022 11:56	03/21/2022 16:00	03/23/2022 15:22	7.14	
		MW-114S-31622	Water	03/16/2022 13:24	03/21/2022 16:00	03/23/2022 15:41	7.10	
		MW-117S-31622	Water	03/16/2022 14:16	03/21/2022 16:00	03/23/2022 16:01	7.07	
		DUP-01	Water	03/16/2022 0:01	03/21/2022 16:00	03/23/2022 16:20	7.68	
		Trizma FB	Water	03/16/2022 0:01	not analyzed	not analyzed	NA	
		MW-103S-31622	Water	03/16/2022 15:25	03/23/2022 14:45	03/24/2022 15:40	8.01	
		MS MW-103S-31622	Water	03/16/2022 15:25	03/23/2022 14:45	03/25/2022 9:31	8.75	
		MSD MW-103S-31622	Water	03/16/2022 15:25	03/23/2022 14:45	03/24/2022 16:19	8.04	
		EB-1-31622	Water	03/16/2022 15:25	03/23/2022 14:45	03/24/2022 16:38	8.05	
		Trip Blank	Water	03/16/2022 0:01	03/23/2022 14:45	03/24/2022 16:58	8.71	

Table 4
Qualified Sample Results Due to Outlying MS/MSD Results
March 2022 Biannual Groundwater Sampling Event
RACER Flint West #12990, Flint, Michigan

Analyte	Batch or Sample ID	MS % Recovery	MSD/MSD Replicate % Recovery	RPD (percent)	Control Limits % Recovery	RPD	Associated Samples	Qualified Result(s)
Rpt S33939	AK220324							
M2-4:2FTSA		242.7	286.4	9.5	50.0-150.0	30		E
M2-6:2FTSA		171.1	167.9	9.5	50.0-150.0	30		E
M2-8:2FTSA		123.8	176.4	23.4	50.0-150.0	30		E
Rpt S33940								
Bromomethane	220323B9	61.9	54.8		56.8-151.3			D
Chloroethane		57.6	52.6	9.2	53.4-149.4	30		D
Styrene		71.5	68.4	12.2	69.5-126.7	30		D
1,2,4-Trimethylbenzene		77.2	75.0	3.0	81.4-130.8	30		D
1,2,4-Trichlorobenzene		148.0	148.3	0.2	27.4-143.4	30		E
1,2,3-Trichlorobenzene		149.0	148.7	0.2	75.4-131.4	30		E

E- Analyte potentially elevated if detected

D- Analyte potentially decreased if detected

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
March 2022 Biannual Groundwater Sampling Event
RACER Flint West #12990, Flint, Michigan

Analyte	MW-114S (Water)				
	03/16/22 13:04		Dupe1		RPD (%)
Arsenic, Dissolved	13	f	11	f	15.38%
Arsenic	52		49		5.77%
Chromium VI, Dissolved	<10	c	<10	c	---
Chromium VI	<10		<10		---
Chromium, Dissolved	0.215	bf	0.286	bf	**33.02%**
Chromium	0.57	b	0.609	b	6.84%
Copper, Dissolved	<5	f	<5	f	---
Copper	3.007	b	3.227	b	7.32%
Lead, Dissolved	<3	f	<3	f	---
Lead	2.466	b	2.637	b	6.93%
Selenium, Dissolved	<5	f	<5	f	---
Selenium	<5		<5		---
Zinc, Dissolved	12	f	13	f	8.33%
Zinc	37		23		**37.84%**

Metals concentrations in ug/L (ppb).
RPD less than 30% are considered acceptable.
Less than (<) concentrations indicate Laboratory Method Detection Limits (MDLs).

RPD less than 30% are considered acceptable. RPD exceeding 30% are indicated in **BOLD**.

Qualifier “f” indicates that the sample was filtered and preserved in lab.
Qualifier “c” indicates that the sample was filtered in lab.

Qualifier “b” indicates that the value detected less than reporting limit, but greater than MDL.

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
March 2022 Biannual Groundwater Sampling Event
RACER Flint West #12990, Flint, Michigan

Analyte	MW-114S (Water)		
	03/16/22 13:04	Dupe1	RPD (%)
Acetone	<50	<50	---
Acrylonitrile	<2	<2	---
2-Butanone (MEK)	<25	<25	---
Benzene	<1	<1	---
n-Butylbenzene	<1	<1	---
Bromobenzene	<1	<1	---
Bromochloromethane	<1	<1	---
Bromodichloromethane	<1	<1	---
Bromoform	<1	<1	---
Bromomethane	<5	<5	---
sec-Butylbenzene	<1	<1	---
tert-Butylbenzene	<1	<1	---
Carbon disulfide	0.19 JB	0.2 JB	5.26%
Carbon tetrachloride	<1	<1	---
Chlorobenzene	<1	<1	---
Chloroethane	<5	<5	---
Chloroform	0.14 J	0.14 J	0.00%
Chloromethane	<5	<5	---
1,1-Dichloroethane	2	2	0.00%
1,1-Dichloroethene	1	1	0.00%
1,2-Dibromo-3-chloropropane	<5	<5	---
1,2-Dibromoethane	<1	<1	---
1,2-Dichlorobenzene	<1	<1	---
1,2-Dichloroethane	<1	<1	---
1,2-Dichloropropane	<1	<1	---
1,3-Dichlorobenzene	<1	<1	---
1,4-Dichlorobenzene	<1	<1	---
cis-1,2-Dichloroethene	131	124	5.34%
cis-1,3-Dichloropropene	<1	<1	---
Dibromochloromethane	<5	<5	---
Dibromomethane	<5	<5	---
Dichlorodifluoromethane	<5	<5	---
Diethyl ether	<10	<10	---
trans-1,2-Dichloroethene	0.75 J	0.67 J	10.67%
trans-1,3-Dichloropropene	<1	<1	---
trans-1,4-Dichloro-2-butene	<1	<1	---
Ethylbenzene	<1	<1	---
2-Hexanone	<50	<50	---
Hexachloroethane	<5	<5	---
p-Isopropyltoluene	<5	<5	---
Isopropylbenzene	<5	<5	---
2-Methylnaphthalene	<5	<5	---
4-Methyl-2-pentanone (MIBK)	<50	<50	---
tert-Methyl butyl ether (MTBE)	<5	<5	---
Methyl iodide	<1	<1	---
Methylene chloride	<5	<5	---
Naphthalene	<5	<5	---

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
March 2022 Biannual Groundwater Sampling Event
RACER Flint West #12990, Flint, Michigan

Analyte	MW-114S (Water)		
	03/16/22 13:04	Dupe1	RPD (%)
n-Propylbenzene	<1	<1	---
Styrene	<1	<1	---
1,1,1,2-Tetrachloroethane	<1	<1	---
1,1,1-Trichloroethane	1	1	0.00%
1,1,2,2-Tetrachloroethane	<1	<1	---
1,1,2-Trichloroethane	<1	<1	---
1,2,3-Trichlorobenzene	<5	<5	---
1,2,3-Trichloropropane	<1	<1	---
1,2,3-Trimethylbenzene	<1	<1	---
1,2,4-Trichlorobenzene	<5	<5	---
1,2,4-Trimethylbenzene	<1	<1	---
1,3,5-Trimethylbenzene	<1	<1	---
Tetrachloroethene	<1	<1	---
Tetrahydrofuran	<90	<90	---
Toluene	<1	<1	---
Trichloroethene	172	162	5.81%
Trichlorofluoromethane	<1	<1	---
Vinyl chloride	7	6	14.29%
o-Xylene	<1	<1	---
p,m-Xylene	<2	<2	---
Xylenes, Total	<3	<3	---

VOC concentrations in µg/L (ppb).
RPD less than 30% are considered acceptable.
Less than (<) concentrations indicate Laboratory Method Detection Limits (MDLs).
RPD less than 30% are considered acceptable. RPD exceeding 30% are indicated in **BOLD**.
Qualifier “J” indicates that the indicated value is estimated, less than reporting limit but greater than the MDL.
Qualifier “B” indicates that the compound also found in associated method blank.

Table 5
Field Sample Duplicate Results and Relative Percent Differences (RPD)
March 2022 Biannual Groundwater Sampling Event
RACER Flint West #12990, Flint, Michigan

Analyte	MW-114S (Water)		
	03/16/22 13:04	Dupe1	RPD (%)
PFBA	<9.8	<10	---
PFPeA	<3.9	<4.1	---
4:2 FTSA	<2.0	<2.1	---
PFHxA	1.7	<2.1	---
PFBS	1.5	<2.1	---
PFHpA	<2.0	<2.1	---
PFPeS	<2.0	<2.1	---
6:2 FTSA	<2.0	<2.1	---
PFOA	2.4	<2.1	---
PFHxS	<2.0	<2.1	---
PFHxS-LN	<2.0	<2.1	---
PFHxS-BR	<2.0	<2.1	---
PFNA	<2.0	<2.1	---
8:2 FTSA	<2.0	<2.1	---
PFHpS	<2.0	<2.1	---
PFDA	<2.0	<2.1	---
N-MeFOSAA	<2.0	<2.1	---
EtFOSAA	<3.9	<4.1	---
PFOS	16	13	18.75%
PFOS-LN	6.8	5	26.47%
PFOS-BR	9.6	7.6	20.83%
PFUnDA	<2.0	<2.1	---
PFNS	<2.0	<2.1	---
PFDoDA	<2.0	<2.1	---
PFDS	<2.0	<2.1	---
PFTrDA	<2.0	<2.1	---
FOSA	<2.0	<2.1	---
PFTeDA	<3.9	<4.1	---
11Cl-PF3OUdS	<2.0	<2.1	---
9Cl-PF3ONS	<2.0	<2.1	---
ADONA	<2.0	<2.1	---
HFPO-DA	<3.9	<4.1	---

All PFAS concentrations in ng/L (ppt).
A RPD less than 30 is considered acceptable.
Less than (<) concentrations indicate Laboratory Method Detection Limits (MDLs).

APPENDIX C: LABORATORY REPORTS

NOTE: Since this validation report is included as an Appendix to the March 2022 Data Report, Copies of the laboratory reports are included in the March 2022 Data Report as Appendix B, Attachment 3 and are not duplicated here.